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PLAY MAKERS

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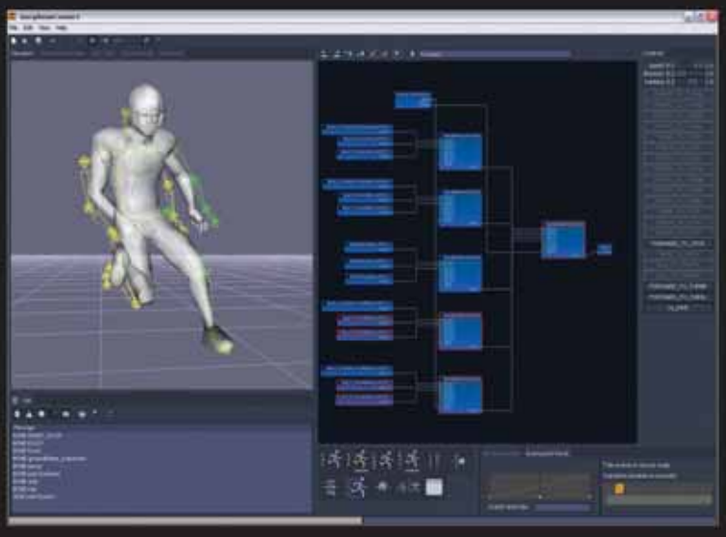
VOLATILE games

morpheme™

advanced animation system



morpheme is the industry's first graphically authorable animation engine. morpheme consists of morpheme:runtime: an advanced runtime animation engine for PLAYSTATION®3, Xbox 360™ and PC, and morpheme:connect: a highly-customizable 3D authoring application.

morpheme gives animators and developers unprecedented control over the look and feel of their animations in-game: blends, transitions, compression, etc. can all be previewed and modified graphically in morpheme:connect and live on the target platform.

morpheme:runtime ships with full source code and integrates seamlessly with euphoria, NaturalMotion's Dynamic Motion Synthesis technology.

For more information, visit www.naturalmotion.com

blend tree

Advanced graphical tools for building complex blend trees. Real-time visualization of animation source contribution through node highlighting

blending

Graphical control of transition blending between states in the transition graph

multiple characters

Visualization of multiple runtime characters in morpheme:connect for easy authoring and analysis of character interaction

network

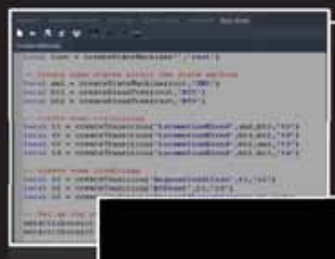
Advanced graphical tools for creating and visualizing transition networks through drag-and-drop

control parameters

Exposure of custom high-level controls for entire animation system. Real-time manipulation through sliders or game pad controller

scripting

Full Lua scripting for automating tasks, adding AI logic or polling game pads for real-time input



timeline

Graphical mark up of animation data to add one-shot and duration events, for highlighting footfalls, sound effects, etc.

node palette

Advanced blend notes for dragging and dropping into transition network. Fully customizable node types through C++ and scripting

animation browser

Easy browsing and selection (drag & drop) of source animation. Animation list is automatically updated to reflect changed source files

transition requests

Exposure of custom transition messages. In-tool emulation of interaction between morpheme:runtime and game AI system

naturalmotion

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develop
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www.havok.com

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ALPHA

ADVENTURES IN GAMES DEVELOPMENT: NEWS, VIEWS & MORE

"The willingness of non-games media to pay a premium for communities has not diminished..." p20

Foundation 9's European expansion

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Power List: Exclusive studio ranking

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N-Gagement party

November launch for Nokia's N-Gage service – but will hardware acceleration crash the celebrations?

After over a year and a half of R&D, Nokia has finally confirmed the launch for its revamped N-Gage – now a cross-platform digital distribution service rather than a single hardware solution – promising that once it rolls out in November developers will have access to "the largest mobile gaming platform in the market by far".

Sure, we've heard this all before - not least of all back when the first N-Gage arrived in 2003, and ever since Nokia unveiled its new approach to games at GDC 06 – but with key companies giving the handset manufacturer a second chance it seems that this time the Finnish phone firm's plans may finally succeed in the way it intends.

ONE DOOR OPENS...

The games push is just one part of the company's new strategy called 'Ovi' (which means 'door' in Finnish) which adds a number of service-driven elements to its phones, covering games, music and maps. Nokia is aiming to drastically change its business from one focused on devices to one that addresses how mobile and social web applications can work together.

The N-Gage application will be available to all Nokia's N-series devices - which have already sold 40 million units in total. Such "instant backwards compatibility" will provide a "huge market attractive to publishers" said Anssi Janjoki, executive vice president and general manager of multimedia at Nokia, who has headed up the company's new web-centric service strategies.

Plus, users will be able to try and buy games both via their handsets upgraded to the N-Gage platform or via an application available to PCs.

...ANOTHER CLOSES?

However, providing a unified platform to completely provide a single-SKU/mutli-handset solution is already being counteracted a little by Nokia's own handset interests.

Devices such as the N95 and N93 support hardware accelerated – and arguably more powerful – games, but to utilise this developers will have to create a separate version of their title to take advantage of it, Nokia says.

It's not clear how important this point may be, in truth, but it's one that Nokia will want to address, to stop any of the customary N-Gage grumbling.

An SDK is in the works which may emerge to stop this becoming a requirement – but in the meantime, it will be up to developers and their publishers to decide if it's worth devising such high-end games at the moment.

That said, while creating games for hardware acceleration instantly undermines the idea of making a single game for a pre-installed user base, with casual games so highly regarded it might just end up a moot point rather than a sore one.

www.nokia.com

WORLD*VIEW* GLOBAL NEWS > p08

Editorial
Engine troubles?

With interest from all over, the recent Epic vs Silicon Knights court case has been one of the biggest games development stories of recent months.

If you can call it a story, that is – if anything it is a fairly sad tale, especially when the punchline is that two developers have resorted to suing each other. It probably doesn't help that consumer sites which don't really understand the matter just egg on the spewing of hot air.

Looking at the case at hand, I can't help but feel that it's a non-issue – or at least, the umbrage between the outspoken figureheads on each side, Mark Rein and Denis Dyack, is just a red herring.

Surely UE3's success is hinged not just on that it promises an amazing next-gen engine, but that Epic Games goes through the various TRCs leading up to release ahead of all its licensees, proving that there is viable tech to aid new games?

After all, the company has probably chosen to lose money by tying *Unreal Tournament 3* to timed PS3 exclusivity, using that as an excuse to optimise the engine for Sony's format. Of course, the game's proximity to *Halo 3* may disprove any real altruism, but the possibility the company is losing out in the short-term in order to help its licensees in the long-term is worth remembering.

Fact is, engines are just a part of the story for every game they power – the game itself is of course where the real power lies. Proof of this is that Epic has the entire *Gears of War* source code available to licensees to read and copy if they need to in order to join the dots between game content and engine code.

Whichever side of the legal fight you sympathise with most, all the lawsuit really serves to underline is one of games development middleware's dirty secrets: that no engine is ever finished.

As we learn this month, in both our dedicated game engine feature (p50) and talk with cover stars NaturalMotion (p26), the technology is only half the story. And it's when and how you fill in the gaps that is most important.

Michael French
michael.french@intentmedia.co.uk

Foundation

Fresh from its acquisition of Sheffield-based studio Sumo Digital, US

As hinted at in the pages of *Develop* just over a year ago, American superstudio Foundation 9 Entertainment has spread to the UK.

Last month, the company announced its acquisition of Sheffield's Sumo Digital – but the company's growth won't stop there, according to CEO Jon Goldman.

"We'll continue to look at opportunities that add something to the company," Goldman told *Develop*, although he added that "our studios are poised to grow quite well organically."

"Right now, at 850 or so people, we're plenty large and our goal is not to pursue a traditional financial roll-up scheme."

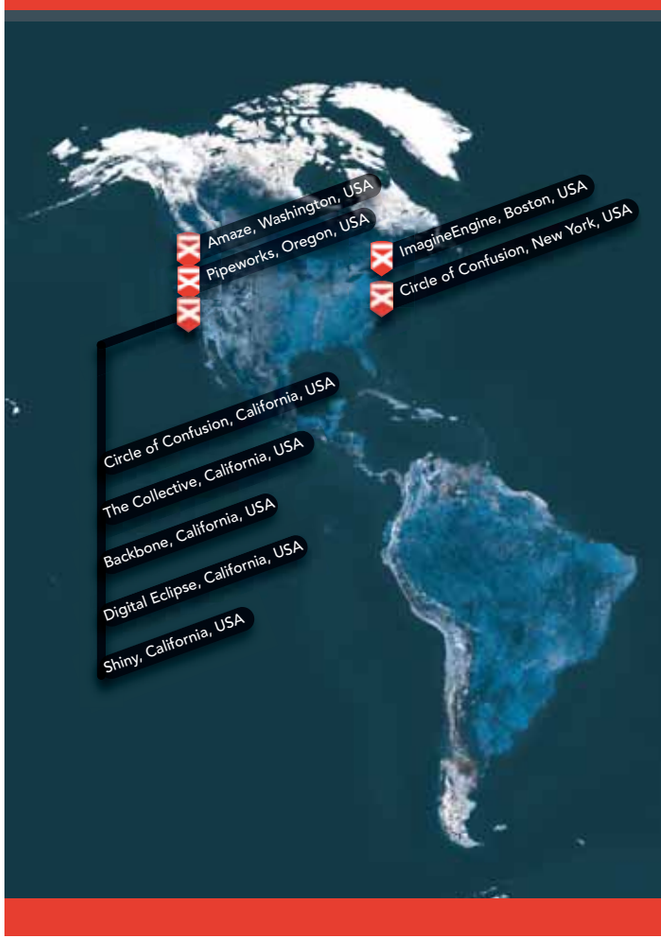
Instead, F9E wants to spread its wings by improving facilities and capabilities across a network of studios that includes Amaze, Backbone, The Collective, Digital Eclipse, InginEngine, Pipepworks and Shiny Entertainment – and now Sumo, too.

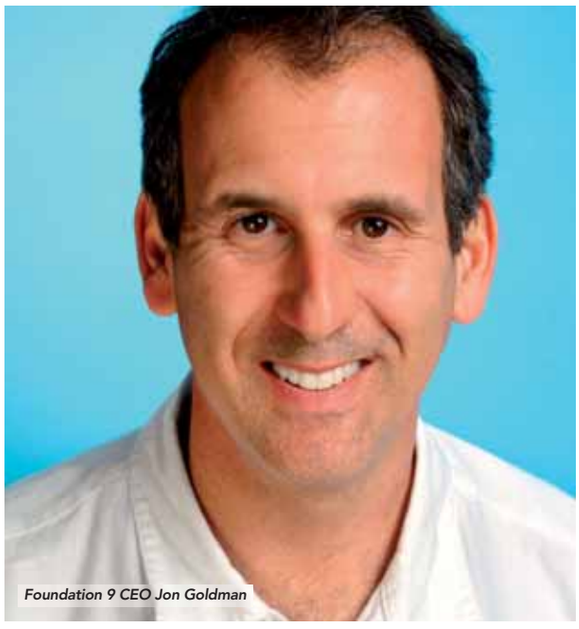
While the swoop for Sumo is intended to strengthen Foundation 9's development capacity across multiple platforms, according to Goldman (recent projects for the UK firm include *Virtua Tennis 3* for 360 and *Super Rub 'a' Dub* for PlayStation Network), perhaps more important is the fact the move gives the American super studio offices in two countrie – the Sheffield development centre and its recently opened office in Pune, India, granting access to local markets its North American empire couldn't reach.

"Foundation 9 wanted a presence in Europe, both to tap the immense talent pool there, as well as to interact directly with European publishing contacts in their own time soon," explained Goldman.

Meanwhile India, he said, "makes sense from a talent, cost and demographic perspective."

F9E'S GROWING GLOBAL GRIP





Foundation 9 CEO Jon Goldman

# of an empire

firm Foundation 9 Entertainment reveals further plans for global growth

"On that last point, India isn't just a low cost centre," he explained.

"The economy will continue to boom, there is already a vibrant media industry, and we'll need Indian talent to help us develop games for the Indian market in future."

At home as well, Foundation 9 Entertainment is investing in its consumer testing facilities at its Kirkland, Washington studio, and is pushing forward with implementing better management which "actually benefits from our size and resources, as opposed to us just being large and there being no real difference in how we deliver products."

He added: "On a more nuanced level, our business is very straightforward; we need to hone the service aspect of our business so that we are delivering a high quality experience.

"We're busily examining ways to invest incrementally more of our resources in self-funded projects..."

"We're aiming not only to respond to what publishers need but to improve our understanding of what customers want most."

Which neatly leads into the fact that Foundation 9 will also be looking to see how it can move beyond the work for hire model to thinking up concepts tailored for consumers.

"We're busily examining ways to invest incrementally more of our resources in self-funded projects, when it makes sound business sense," said Goldman. "Only a very small number of our projects fall into this category right now, but this will become a valuable engine of growth for the company."

The first is already announced, however, with Backbone working on the *Pokemon*-esque Wii and DS game *Monster Labs*, to be published by Eidos next year.

www.F9E.com

DATA BYTES

70%

The number of 'family gamers' who believe casual games provide educational benefits to their children and grandchildren.

Source: PopCap and Information Solutions Group

23

The number of different countries with delegates attending or speaking at 2007's Develop conference.

Source: Tandem Events

"In the next five years you can become a billionaire just developing for PS2..."

David Reeves, president and CEO of SCEE, reminds everyone that Sony is a multiplatform format-holder

DEVELOPMAG.COM BUILDS MOMENTUM

Just a quick reminder to point you towards our recently relaunched *Develop* site. Along with news updates throughout the day – supported by our popular email Daily Digest and Newsflash services – we're posting up interviews, features studio profiles and tutorials all throughout the working week. Head to **www.developmag.com**

WorldView

Our regular round up of development stories from across the globe…

SEATTLE, USA

At its Gamefest event last month Microsoft announced it has decided to merge its prosumer and professional XNA Game Studio apps into one fully-featured package, XNA Game Studio 2.0, which is due to launch later this year.

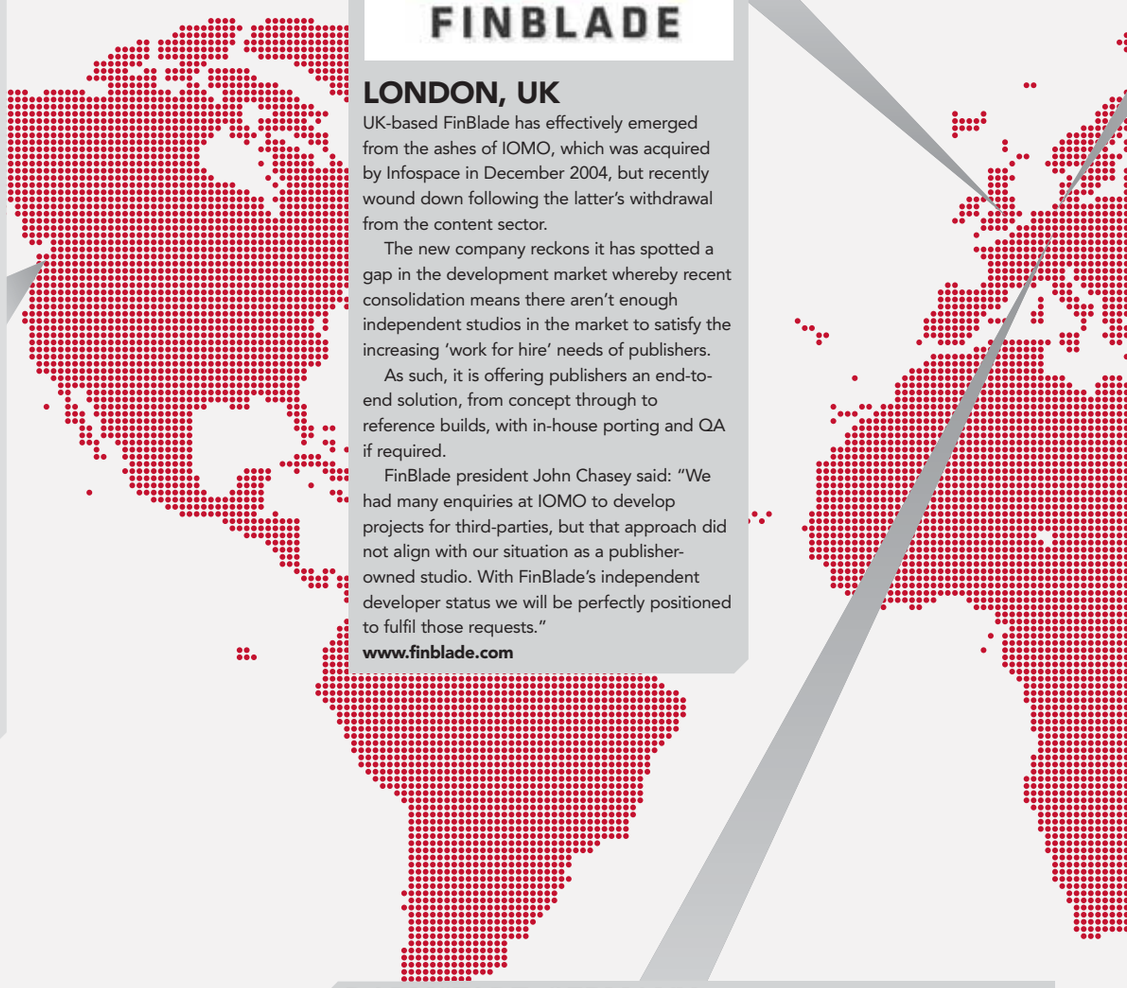
Developers who wish to make Xbox Live Arcade titles and who are licenced XNA developers will have access to extra libraries that will plug into the Game Studio 2.0 software. Most impressive of the new features in 2.0 is the ability for all developers making titles for 360 to gain access Xbox Live, complete with support for the matchmaking and voice-chat facilities that such access provides.

Alongside an increase in performance, version 2.0 will no longer be limited to the free Visual C# Express software and will instead work with every version of Visual Studio, enabling developers to use time-saving VS plug-ins with the software.

XNA general manager Chris Satchell also revealed that the company had made an "unprecedented" move to allow consumers direct, legal access to game content from a number of Microsoft-owned IPs.

The licence, similar to the Creative Commons agreement that some writers and artists use to give their works free and open copyright to the public, gives users access to any game published by Microsoft Game Studios (but not any third-party brands). Users don't get rights to share the games themselves, but can share creations that use game content.

creators.xna.com



LONDON, UK

UK-based FinBlade has effectively emerged from the ashes of IOMO, which was acquired by Infospace in December 2004, but recently wound down following the latter's withdrawal from the content sector.

The new company reckons it has spotted a gap in the development market whereby recent consolidation means there aren't enough independent studios in the market to satisfy the increasing 'work for hire' needs of publishers.

As such, it is offering publishers an end-to-end solution, from concept through to reference builds, with in-house porting and QA if required.

FinBlade president John Chasey said: "We had many enquiries at IOMO to develop projects for third-parties, but that approach did not align with our situation as a publisher-owned studio. With FinBlade's independent developer status we will be perfectly positioned to fulfil those requests."

www.finblade.com

DARMSTADT, GERMANY

Independent developer 10tacle continues to grow, recently reporting a record rise in revenues – and the acquisition of a 29 per cent stake in UK developer Climax.

The Climax deal, dubbed a "strategic partnership" by the two, could foreshadow a full acquisition, as 10tacle has admitted that it is "seriously auditing" the possibility of integrating the UK independent into its business further.

The company has around 400 employees at different studios across Europe, including London-based racing team Blimey Games and *GTR*-maker Simbin. It also recently acquired Budapest's Stormregion.

Together, Climax and 10tacle will be working on two action and fantasy titles and also work on a new online world commissioned by MTV Europe.

The MTV deal and a €14m contract with Asia Games & Media Private Equity Fund have in turn helped the company's revenues rise significantly: for the first half of 2007 cash generated came in at €19.4m, a jump over last year's figure of €12.71m, with EBIT up 45 per cent to €3.37m.

www.10tacle.de

For global games development news as it breaks head to ***WWW.DEVELOPMAG.COM***

WARSAW, POLAND

Epic Games has acquired a majority interest in People Can Fly, the Polish development studio behind *Painkiller*.

The two companies first developed a relationship when People Can Fly showed Epic prototypes of an Unreal Engine 3-based multi-platform title they were working on, the results of which Epic were so impressed with that they hired People Can Fly to help with the PC version of *Gears of War*.

The two companies are also working together on a new IP, which is currently being shown to publishers.

www.peoplecanfly.com

"I do get the distinct feeling that because of the Wii, people all over the world are finally taking notice of video games again, when they haven't for a while..."

Shigeru Miyamoto talks up how Nintendo has made the industry an exciting topic for the masses

HYDERABAD, INDIA

Games outsource services provider Gameshastra Solutions is to expand its presence in India – CEO Prakash Ahuja says he is looking for a new location in Hyderabad that could help take the staff roster 1,000 employees. The firm already has a facility in the location which hosts 160 staff.

The company is already starting to ramp up work on content tailored specifically for local tastes via games based on Bollywood characters.

"We recently signed agreements with two production houses for developing games based on Bollywood characters for console, online and PC platforms. Development of these games are currently on in tow with Hindi script writers. We expect the first game to be released in India by March next year, and the second in six months from then," he told *Business Standard*.

www.gameshastra.com

WELLINGTON, NEW ZEALAND

This year's SIGGRAPH (which actually took place in San Diego) was packed with new product announcements for those working in the computer graphics industry. Autodesk, Softimage, NaturalMotion, Nvidia and plenty of others had plenty to say – and we've got a full event report and plenty of news bytes over at developmag.com.

Biggest news of the event, however, in a 'movers and shakers' sense, was Autodesk's acquisition of Skymatter, a company spun out of effects house Weta and creator of the Mudbox 3D sculpting software. The brush-based package is used by studios such as Epic and Pandemic as well as film studios including Weta. Its assimilation into the Autodesk line of games industry-facing products fills a slot in the firm's offering, according to company reps that spoke to *Develop*, with the company that already counts itself as top dog in the games graphics world as vendor of Max and Maya now able to offer an ultra high-end high-poly modeling package as well.

www.mudbox3d.com

GLOBAL REPORTS

FRANCE: LYON RAMP UP

Organisers of the upcoming inaugural Lyon GDC have put out a call for papers, inviting the industry to submit proposals for sessions. The conference takes place on December 3rd and 4th and focuses on two themes: next-gen games and multiplatform development. Game Connection Europe takes place alongside the event, running from December 4th to December 6th.

www.lyongdc.com
www.game-connection.com

LONDON: CASH FOR KILLS

Kwari, a London-based developer and publisher, has announced its new multiplayer online gaming service: a first-person shooter where players win and lose money with every shot. The game, also called *Kwari*, is subscription-free and a no-cost download, but asks players to put down a 'stake' when they enter an arena. "Money changes everything," said Eddie Gill, founder and creator of Kwari. "I wanted to create something that had more of a buzz than a traditional FPS."

www.kwari.com

AUSTRALIA: IR BOUGHT

Melbourne, Australia's IR Gurus is to be acquired by US company Red Mile Entertainment. IR's 100-strong studio is currently working on the latest installment in Red Mile's *Heroes* franchise having created the first game in the series – *Heroes of the Pacific*.

redmileentertainment.com

USA: GAMECOCK GROWS

Indie newcomer publisher Gamecock continues to sign new deals with independent developers, this month taking on *Pirates vs Ninjas* from Canadian team Blazing Lizards and *Sabotage* from German outfit Replay Studios.

www.gamecockmedia.com

USA: EPIC COUNTER SUES

Epic Games has filed a counterclaim against Silicon Knight following legal accusations about the viability of Unreal Engine 3. Epic says SK wants to "unlawfully enrich itself" at the studio's expense in a motion to dismiss its legal rival's lawsuit. "The plain language of the Silicon Knights' Complaint makes clear that Silicon Knights wants to take Epic's Licensed Technology, pay nothing for it, and use it any way it pleases," said a statement from Epic.

www.epicgames.com

DEVELOP DIARY

YOUR COMPLETE GAMES DEVELOPMENT EVENT CALENDAR FOR THE MONTHS AHEAD...

SEPTEMBER 2007

TOKYO GAME SHOW
September 20th to September 23rd
tgs.cesa.or.jp
Japan's big yearly industry trade show, this year's iteration boasts the biggest ever international showing and two business-only days.

GAME CONNECTION ASIA
September 20th and September 21st
tgs.cesa.or.jp
The developer and publisher meeting place, popular at GDC and in its dedicated Lyon event in December, this year is running a dedicated two day event as part of the Tokyo Game Show, hoping to help Asian developers, publishers and service companes do business.

OCTOBER 2007

SQS
October 3rd
QE2 Conference Centre, London, UK
www.sqs-conferences.com
The yearly QA/Testing event targets the games industry for the first time with a one day exploration of QA and testing's position in the industry

E FOR ALL EXPO
October 18th to October 20th
Los Angeles Convention Center, USA
www.eforallexpo.com
IDG's take on E3 – but specifically this is a consumer show.

LONDON GAMES FESTIVAL
October 22nd to October 26th
www.londongamesfestival.co.uk
A week-long series of events designed to raise the profile of the games industry.

BAFTA GAMES AWARDS
October 23rd
Battersea Evolution, London, UK
www.bafta.org
The British Academy's take on a gong show, with a move to a bigger venue and renewed developer focus for 2007.

CREATIVE INDUSTRIES CONTENT MARKET
October 23rd to October 24th
BAFTA, London, UK
www.tiga.org
A chance to meet potential collaborators and clients from other creative industries during the London Games Festival.

VIRTUAL WORLDS FORUM
October 23rd to October 26th
Kings Cross Freight Depot, London, UK
www.virtualworldsforum.com
The first pan-European virtual worlds conference will provide a place for brands and developers to meet and discuss the business prospects in online spaces.

NOVEMBER 2007

IGDA LEADERSHIP FORUM
November 8th and November 9th
Airport Marriott, San Francisco, USA
www.igda.org/leadership
The IGDA and its Production SIG join together to host an event dedicated to advancing the art of game production and management, tackling topics such as scheduling, post-mortems and team management techniques. Bioware's Ray Muzyka and Greg Zeschuk and Double Fine's Tim Schafer are among the confirmed speakers.

DECEMBER 2007

LYON GDC
December 3rd and December 4th
www.lyongdc.com
Game Connection and CMP team up to host 60 classes over a two-day period, running concurrently with the Game Connection 'business matchmaking' event in France (below).

GAME CONNECTION EUROPE
December 4th to December 6th
Le Palais des Congrès de Lyon, France
www.game-connection.com
The popular Game Connection event returns for another year of games industry speed dating par excellence.

FEBRUARY 2008

GDC 08
February 18th to 22nd
Moscone Centre, San Francisco, USA
www.gdconf.com
The call for papers is now open for both GDC and GDC Mobile.

North West - Games Programmer
This developer has a strong history of producing AAA games, and they're looking for an **experienced games programmer** to join them. Ideally you'll have at least **two years experience** at a recognised studio, and you'll be eager to build on your existing skill set in any areas ranging from **AI** or **physics** through to **graphics**, **audio** or **gameplay**.

Scotland – Concept Artist
AAA studio, major **critical** and **commercial success** with its first release. Need we say more? Looking for a concept artist to come on board and assist in the development of their **MMO**. You'll have industry experience and an ability to work with **Photoshop** and **Illustrator**, creating **finely detailed concepts** from **multiple viewpoints**.

North East - Senior Games Designer
This **multinational** client is currently working on a number of titles, and is looking for a top notch games designer with **at least 4 years experience** to come on board, join the team and make great games. An opportunity to add a premier level developer to your CV!

North America – Creative Director
This AAA developer is on the look out for a new Creative Director to work on the kind of games that **hog the headlines** at events like **E3**. You'll get to work with some of the most **creative minds** in more than just the games industry – **movie studios** will play no small part in your career at this place.

Don't just take our word for it...
"Making the right career move can be a difficult decision but with ***Prospero*** you can be sure they match you with the company that fits your future."
Jonathan Kay, Producer, Pivotal Games Ltd

Europe – Senior AI Programmer
Working with the studio behind one of the most successful **military themed franchises** in the history of games, you'll work closely with designers on **brand new military related IP**. It's an **English speaking office**, with a generous salary and relocation package and a fantastic range of ancillary benefits.

South West - Producer
Working with the studio behind one of the most highly regarded and hugely successful **military** franchises ever conceived, you'll get to **produce** the **nextgen** version of this AAA series. Ideally you'll have worked on **one published game** as an **internal producer**, or worked across several titles as an external producer.

Midlands – Assistant Lead Artist
This AAA studio is looking for an assistant lead artist to work on their next title in one of the most highly regarded **racing series** around. You'll get to work alongside a hugely talented creative team in **defining the look** of its **next generation racer**, with the opportunity for **project bonuses** and **flexible hours**.

South East (Inc London) – PC Programmer
This studio has created some of the **best racing games ever made** and will give your CV a chance to **really stand out**. They're looking for someone confident in all aspects of PC programming to provide their skills in areas such as **graphics**, **gameplay**, **AI** and **physics**.

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Who Dared won

Winners cheered as student game design and development contest Dare to be Digital has its biggest year yet

The winners of this year's Dare to be Digital celebrated in style this year – with the three finalists now battling it out for a BAFTA.

2007's competition was the most geographically diverse so far, featuring one Chinese and one Indian team in its 12 contending groups of five

'Innovation and Creativity' winners Phoenix Seed were comprised of one Dundonian and four Chinese students, and scooped the award for casual title *Bear Go Home*.

Edinburgh University's Carebox team won the 'Use of Technology' prize for ClimbActic, while Voodoo Boogy, five students from Abertay University, won the 'Commercial Potential' award.

Each team gets £2,500 and will also be put forward as the sole nominees for the BAFTA Ones to Watch award, unveiled in October.

The 12 teams were narrowed down to six finalists during the Dare ProtoPlay event at the Edinburgh Interactive Festival, which gave the public the chance to try out the finalists and vote for the Audience Award prize, also won by Voodoo Boogy.

The six finalists then had to pitch their games to a panel of industry professionals, which included Realtime World's Dave Jones and Geoff Heath of NCsoft.

"The judges were incredibly impressed by the quality of the work. All the teams have demonstrated an extremely high level of achievement in the ten weeks and have clearly benefited from testing their games at Dare ProtoPlay," said Heath

DOUBLE DARE

The competition has grown a reputation as being a good route for students to get into the industry, with contestants from last year's contest currently working at studios such as Rockstar North, EA UK and BBC Scotland.

"Dare to be Digital was first run eight years ago and its growth has been phenomenal," said Professor Mike Swanston, vice-principal of academic development at event co-coordinators Abertay University. "But the ethos of the competition remains constant: students come in with ideas, boundless energy and enthusiasm, and come out confident and highly skilled with much-sought-after experience under their belts.

"Dare is a particularly high profile example of the approach that Abertay seeks to adopt across all its learning and teaching activities – developing real-world skills for the real-world knowledge economy. Modern universities like Abertay can have a significant economic impact on the basis of their special skills and links with industry, and we believe that Dare to be Digital demonstrates one very successful channel for delivering this impact."

Next year's event is set to grow again, after Channel 4 recently announced that it would be backing the event. This year saw the competition expand to include Guildford and Dublin alongside Abertay as host centre – with Channel 4's help it will widen to include Wales in 2008.

www.daretobedigital.com

DARE: THE WINNERS

INNOVATION & CREATIVITY

Bear Go Home
by Phoenix Seed

A far-eastern styled casual game, *Bear Go Home* requires players to guide the titular Bear find his way home – but without directly controlling him.

USE OF TECHNOLOGY

Climbactic
by Carebox

Climbactic sees players controlling two characters and using their distinctive abilities to climb sheer rock faces and deep chasms.

COMMERCIAL POTENTIAL

Ragnarawk
by Voodoo Boogy

Genre-bender *Ragnarawk* impressed the judging panel with its blend of fantasy role-playing and electric guitar-based battling.

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In a demonstration reel created by Image Metrics to show off its video game facial animation performance capture, model building and rigging technology, Ilana Rogel, an actress, gives life to an avatar also named Ilana.

'It's also far easier on the actors. Instead of being painted with a chemical or covered in sensors, they need only do what they would ordinarily do: act'
New York Times

'Image Metrics' technology gave us a 20-fold increase in productivity'
Sony Pictures Imageworks

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DEVELOPER CHART

OUR MONTHLY RANKING OF THE WORLD'S STUDIOS BASED ON UK GAMES SALES

AUGUST 2007

THIS MONTH	LAST MONTH	STUDIO DETAILS		BEST SELLING GAME
1	▲ 2	NINTENDO		MORE BRAIN TRAINING FROM DR KAWASHIMA (DS)
2	▲ 17	EA UK		HARRY POTTER & THE ORDER OF THE PHOENIX (PS2,PS3,WII,XB360,PC)
3	▲ 35	TRAVELLER'S TALES		TRANSFORMERS: THE GAME (PC, XBOX 360, PS3, PS2, WII)
4	NE	GAME FREAK		POKEMON DIAMOND (DS)
5	▲ 14	AMAZE ENTERTAINMENT		SHREK THE THIRD (PS2, WII)
6	▲ 22	STARBREEZE		THE DARKNESS (PS3, XB360)
7	▲ 8	MAXIS		THE SIMS 2: PETS (PS2, WII, DS, PSP, PC, GC, GBA)
8	▲ 11	UBISOFT (MONTREAL)		TOM CLANCY'S RAINBOW SIX: VEGAS (PS3, XB360, PC)
9	▼ 7	VICARIOUS VISIONS		SHREK THE THIRD (DS, PSP)
10	▼ 6	EA CANADA		NEED FOR SPEED: CARBON (PC, PS2, XBOX, GC, PSP, XB 360, WII, PS3)
11	▲ 18	CAPCOM		RESIDENT EVIL 4 (WII, PS2, GC)
12	▼ 1	MICROSOFT		FORZA MOTORSPORT 2 (XB360
13	▼ 15	EA REDWOOD SHORES		TIGER WOODS PGA TOUR 07 (PS3, XB360, WII, PSP, XB)
14	▼ 5	CODEMASTERS		COLIN MCRAE: DIRT (PC, XB360)
15	▲ 20	OFFICE CREATE		COOKING MAMA (DS, WII)
16	▼ 13	KONAMI DIGITAL ENTERTAINMENT		PRO EVOLUTION SOCCER 6 (PS2, PSP, XB360, DS, PC)
17	▼ 3	EUROCOM ENTERTAINMENT		PIRATES OF THE CARIBBEAN (PS2, PS3, PSP, WII, XB360)
18	NE	TEAM NINJA		NINJA GAIDEN: SIGMA (PS3)
19	▼ 10	EA LA		COMMAND & CONQUER 3: TIBERIUM WARS (XB360, PC)
20	▲ 79	HUDSON		MARIO PARTY 8 (WII)

CHART KEY: ▲ UP ON LAST MONTH ▼ DOWN ON LAST MONTH ■ NO CHANGE IN POSITION **NE** NEW ENTRY □ INDEPENDENT STUDIO

CHART COMMENT

This month's chart shows another solid month for Nintendo as it nudges up from second to first place buoyed by the sales success of *More Brain Training*.

This month also sees another strong display by UK studios, with EA UK and Traveller's Tales performing well at second and third place respectively with *Harry Potter* and *Transformers*.

The top performing games from three of the top five developers are from licensed properties, tying in with the summer blockbuster movies attempting to keep people indoors this summer. Indictative of this is Amaze's rise from 14 to five thanks to hot property *Shrek the Third*.

Also, in terms of other European independents, Starbreeze is still riding high with its licensed comic-book adaptation *The Darkness*, but Eurocom has dropped 14 places as the *Pirates of the Caribbean: At World's End* furore dies down following the film's release several months ago.

Extraordinary sales of *Pokemon Diamond* and *Pearl* have helped catapult Game Freak in to number five in the chart, this month's highest new entry. Similarly faring well on Nintendo's platforms is Office Create, whose *Cooking Mama* Wii and DS titles have helped it move up five places to number 15.

The PS3 drought has helped propel Tecmo's Team Ninja into the top 20, despite *Ninja Gaiden Sigma* being a high-resolution remake of the original Xbox hit.

Highest climber of the month goes to Hudson, though, which has leapt from 79th to 20th thanks to the release of *Mario Party 8*. Given the game's withdrawal from UK shelves due to a use of the word 'spastic', however, it's safe to assume that performance wasn't quite as high as it could have been – possibly pointing to a rise in next month's chart as the game becomes more widely available.

ChartTrack

elspa

THE DEALS

THE BIG CHILE
Chilean independent game studio ACE Team has licenced Valve's Source engine for *Zeno Clash*, a new third-person action game. Team members had previously worked on Xbox Live Arcade and PC games.

PARALYMPICS
The Creative Assembly Australia will be using Parabuild for its upcoming projects, citing its integration with Perforce as one of the reasons behind the choice.

PSYCHENAUTS
German studio Replay Games has signed its latest game, psyche-set stealth action game *Sabotage*, to Gamecock's rapidly growing line-up of titles, for next generation consoles and PCs.

VIT = 2D3 + 2, LOL
Wizards of the Coast's latest Dungeons and Dragons title, *D&D Insider*, will use Vivox's voice-chat services to bring remote players together for communual dice rubbing, allowing public and private voice chat without a performance hit.

BRANCHING OUT
SpeedTree has sprouted five new licensees, with Pivotal, Gearbox, Ubisoft, CITY Interactive and Cyanide picking the foliage middleware for future titles.

SONG FOR WHOEVER
Korean MMO developer XL Games has licenced CryTek's CryEngine 2 for development on their next massively multiplayer game. The company was founded by Jake Song, creator of *Lineage*, which still ranks as one of the world's most popular online role-playing games.

NUDGE, NUDGE
Keeping on the MMO theme, Emergent has bolstered its Chinese business dealings by signing a deal with Winking Entertainment, who will use Emergent's technologies to create massively-multiplayer games for PCs and next-generation consoles.

ILLUSIONS OF GRANDEUR
Czech Republic-based developer Illusion Softworks has signed a deal with Japanese publisher D3 Entertainment to develop a new IP for Xbox 360, PlayStation 3 and PC. The deal is D3's first with a European developer.

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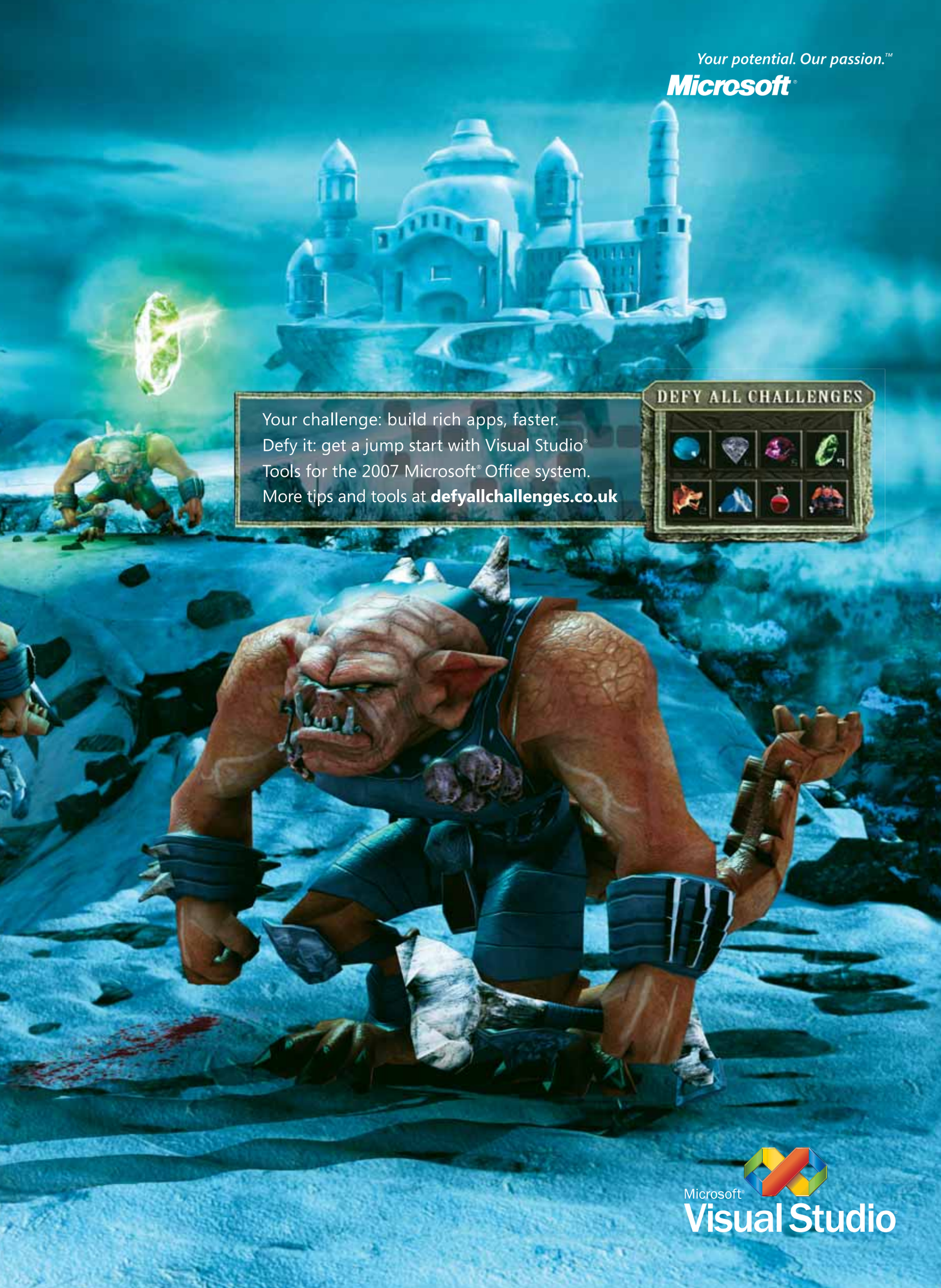

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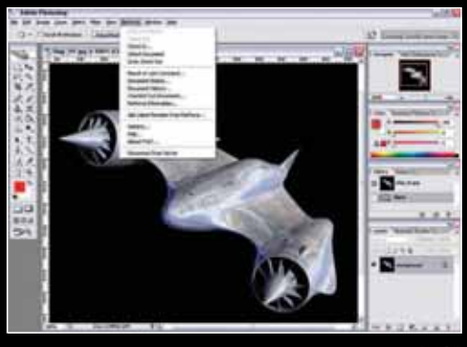

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The Perforce Plug-in for Graphical Tools, P4GT, makes version control painless by seamlessly integrating Perforce with leading graphical tools. Drop-down menus allow access to Perforce from within 3ds Max, Maya, Softimage XSI, and Adobe Photoshop.

Art and development teams can standardise on Perforce to version and manage both source code and digital assets. Enhanced collaboration during the design process helps teams to work together in real time to release small patches or create whole new worlds.

P4GT is just one of the many productivity tools that comes with the Perforce SCM System.

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VARIABLE DECLARTIONS

by Owain Bennallack

Youth crime is not all fun and games

LIKE A REASSURINGLY DRUNK and haggard uncle at a family wedding, violence in games has again stumbled into view, frightening the elders (but not the amused children) and threatening mayhem (before passing out whilst waving a crudely realised fist).

Some things never change. We may no longer be debating the merits of the ST versus the Amiga, but we're still worried that nasty (adult) games like Rockstar's *Manhunt 2* could corrupt the kids. Never mind the fact that generations survived *Mortal Kombat* and *Quake* unscathed, or the continuing lack of evidence of a causal relationship between virtual violence and real life unpleasantness.

There wasn't much evidence the first (or second or third) times around, either; it's the abstract nature of the argument that gives it legs.

You'd hope such stale fodder wouldn't be so much a political hot potato as yesterday's cold chips wrapped in last week's headlines. Alas, politicians are drawn towards victimless 'crimes' like inner city policemen handing out parking tickets in the midst of a happy slapping spree. In a recent interview, the Tory leader David Cameron admitted that his new anti-crime manifesto would look at video games. "We do need to think of the context in which people are growing up," Cameron argued.

Games can't be immune from public scrutiny, and we should wait to see what Cameron's proposing before finally judging his interest in interactive entertainment. Maybe he wants to give young hooligans more access to games? After all, if the kids are inside wielding firearms in a fantasy Canterbury Cathedral, at least it keeps them off the streets. Thatcher is remembered for giving people the Right To Buy council homes and smashing the miners – perhaps Dave will give everyone the right to buy violent games and get more minors mashing?

Sadly, his track record as the Mr Potato Head of adopt-an-opinion politics suggests a less inventive outcome. Indeed, it's rather depressing that the first prime ministerial hopeful young enough to be acquainted with games evinces no experience of them. I stand to be corrected – perhaps it was *Pong* that inspired his entry into Parliament – but it seems more likely that when the rest of his generation were getting into colour clashes on the ZX Spectrum, Cameron was clashing with his Eton buddies over on the croquet field.

"Any human being has the capacity to do good or bad..."

Incidentally, for hundreds of years the British public school system institutionalised violence (the real kind, that gives people bleeding noses and the emotional callousness required to run an Empire) but don't expect a pledge to close them from the Tory leader. Why pick on real world targets when there are fantasy worlds to prohibit?

Increasing casual violence on the streets? It's easier to blame games than our excessive drinking, our extended and aimless modern 'adultescence' or the shift in women's behaviour from restraining voice of disapproval to Magners-toting eggers-on. Knife and gun use resulting in stupidly pointless teenage deaths? It's a deadly serious, heart-breaking issue that a segment of youth swaggers about town destroying lives (including their own), but it can only be the intractability of the obvious correlations – relative poverty, a lack of male role models, poor educational attainment and a disdain for authority – that makes politicians and press turn to castigating games as a solution.

This isn't a one-sided argument. There is certainly a debate to be had about how far simulated violence should go – if only so we can understand better the nature of games.

At the time of writing, the ESRB has refused to say what Rockstar cut from *Manhunt 2* to secure an M-rating in the US, but it's hard to imagine anything structurally significant was altered. A nasty movie might be made more palatable by removing some iffy scenes, but in a game you explicitly assume a role and perform actions, and any gamer should acknowledge that's a different moral problem from passively watching a movie. If anything needed to be changed, it should probably run deeper than editing out a finishing move with a plastic bag: to deny that interactive difference is to deny what makes games great.

Our industry should be alert to such legitimate lines of enquiry, but the reality is they lie outside the terms of a tabloid witch hunt.

The truth is any human being has the capacity to do good or bad, depending on the context. Ill-considered wars, abusive homes, *Lord of the Flies*-style streets devoid of authority – all demonstrably bring out the worst in people. Violent video games are so far proven to give you sore thumbs, and to make you feel a bit silly ten years later when you look back at their shoddy 'life-like' graphics.

Gamers can tell the difference between reality and fantasy. Politicians should do the same.

Owain Bennallack is executive editor of Develop. He edited the magazine from its launch until its February 2006 issue. He has also worked at MCV and Edge, and has provided consultancy and evaluation services to several leading developers and publishers. He is also chairman of the Develop conference advisory board.

MIND YOUR OWN BUSINESS

by Nick Gibson

Extreme M&A Part Three

CONTINUING OUR EXTREME M&A series, this month I want to examine another of the most conspicuous games company transactions within our M&A database, that of IGN Entertainment by News Corp. This particular acquisition appears to have been driven by a single motive, buying a ready-made online community. Although the acquisition was of a community rather than a developer, it makes the valuations of most other games company transactions look like fire-sales.

In October 2005, a newly established Fox Interactive Media Inc (a division of News Corp.) acquired IGN Entertainment for an astonishing $650m in cash. IGN comprised some 20 major and 1,500 affiliate web sites (most games-focused), the web and middleware company GameSpy, premium and free download services Direct2Drive and FilePlanet, and review aggregation site Rotten Tomatoes. In total, IGN and its network attracted 28m unique users per month, a community dominated by males aged 18 to 35. It represented not only one of the largest English-speaking online communities of young men but also one of the most influential for purchasing decisions and establishing trend.

IGN was originally the web arm of Imagine Publishing (the US division of Future PLC) but was spun off in 1999, raising $68.5m in private equity followed by a further $70m when it IPOed on NASDAQ in 2000. Unfortunately IGN during this period underwent a protracted identity crisis changing its name four times and disastrously trying to diversify outside of its core games content. Less than a year later, IGN's share price had plummeted 97 per cent and the company was forced to refocus on games again. In 2003, with the internet bubble showing no signs of being re-inflated, IGN was taken private (its shares were acquired and the company de-listed from NASDAQ) by private equity firm Great Hill Partners for $29.8m.

It was a highly astute but extremely risky move by GHP; IGN was loss-making and was set to record turnover of less than $18m in 2003 but still had its colossal community, a community that GHP firmly believed was fundamentally under-exploited and undervalued. Along with two private equity partners, GHP invested heavily in IGN, growing its sales to $43m in 2004 but seeing its losses widen to $19m. With the markets regaining their buoyancy, IGN filed to re-list on NASDAQ in 2005 and raise a bold $200m (including $120m earmarked to pay off the debt used by GHP and its partners).

Despite significant preparatory costs, the second IPO never happened, in part because GHP had craftily initiated disposal discussions with News Corp in parallel. Whether IGN would have ever achieved its listing is unclear and it is possible that the NASDAQ listing could simply have been a clever attempt to force News Corp's hand. Intentional or not, the strategy worked and worked brilliantly. News Corp not only made its move before IGN could list but also paid a $650m consideration, comprising $620m in up-front cash payments and only $30m in conditional payment (most games transactions comprise at least 15 per cent conditional payment with a higher proportion for the riskier acquisitions). Furthermore, based on its anticipated 2005 revenues, IGN was acquired for a multiple of nearly 10x forecast sales; somewhat ironic considering that News Corp had publicly lamented how overvalued games publishers were just a year earlier.

> ***"IGN Entertainment was acquired for a multiple of nearly ten times forecast sales..."***

This transaction was a triumph for GHP in particular who, in less than two years, managed to generate a $500m profit on $150m of debt and equity investment. It also seemingly represented a return to the nebulous valuation methodologies of late '90s which were often based more on the size of community than the fundamental economic returns it was generating.

The acquisition of NeoPets ($160m) earlier in 2005 and the subsequent acquisitions of Xfire ($102m), Atom Entertainment ($200m) and Club Penguin creator New Horizons Interactive ($700m) suggest that the willingness of non-games media companies in particular to pay a significant premium for established games communities has not diminished and represents an increasingly stark contrast to prices paid for more traditional games companies.

Interestingly, despite the booming demand for virtual worlds and social gaming, most new launches in these markets are coming from outside of the established games development industry. If you haven't already considered how to make community creation and retention a core part of your games and company development strategy, it's probably time now, given the considerable commercial, as well as potential exit valuation, incentives.

Nick Gibson is a director at Games Investor Consulting, providing corporate finance services to the games, media and finance industries www.gamesinvestor.com

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The Game Ahead

Our pseudonymous design expert discusses the continued evloution of games development…

Develop in Brighton was an invigorating experience. It's been a long time since I dragged myself out of my snow-covered cave to mingle with the gamerati; I'd forgotten what a pleasure it can be to discuss the various aspects of game design and development with smart people who actually care about the state of the art in electronic entertainment.

Richard Garriott's keynote address was arguably the best keynote I've ever heard in any industry. Drawing fully upon his 28 years of experience developing games, he not only described some of the future challenges faced by game developers, but outlined the reasons underlying some of the traps into which we have historically fallen. His theory of hardware cycles limiting design creativity was particularly astute; although Nick Burton of Rare's explanation of the development process of *Jetpack* for Xbox Live Arcade was a thoroughly entertaining tale of what turned out to be a very nice little game, it was also a near-flawless example of the cyclical problem that Lord British had described earlier.

The problem, as Garriott explained it, is that with new hardware coming out on a regular basis every three to five years, the technological advancement has effectively served as a substitute for improved gameplay with each new generation of games. For most of their history, electronic games have been effectively graphics-driven. This graphics-driven cycle isn't a new process, beginning with the PlayStation or even the Mega Drive, as MCGA's 320 by 200 resolution with 256 colors was a huge leap forward compared to IBM EGA and the Apple II.

While some of these improvements created new design opportunities – the move from 2D sidescrollers to 3D first-person shooters being the most obvious – in most cases developers have been content to basically recreate the games of the recent past with better graphics and sound. It is striking to see the way Garriott's Akalabeth dungeons visually presaged *Quake* and other enclosed 3D first-person games, even if its two iridescent colors were rendered in seconds per frame rather than frames per second.

Richard Garriot's Tabula Rasa aims to innovate in the MMO space

And Garriott made a convincing case about how the gameplay in current MMOs tends to either imitate that of *Ultima Online* or *Everquest*; he could have easily taken that case even further and pointed out how little the level-up grind has changed from the pre-internet role-playing games of the distant past.

However, there are some encouraging signs that this gameplay-retarding cycle may be coming to an end. Because they are already so spectacular, improvements in graphics offer an increasingly marginal utility and the success of the Nintendo Wii at the expense of the more graphically capable PS3 appears to be the first serious ramification of this law of diminishing returns. Game reviews no longer consist of little more than credulous awe of the pretty, pretty pictures and occasionally even border on being substantive. And the advent of the casual games market seems to be stimulating even the hardest of the hard core technology freaks, like John Carmack of id Software, to move beyond the simple faster = more = better formula.

> ***"Technical advancement has served as a substitute for improved gameplay…"***

Having been a longtime advocate of better artificial intelligence, I was very excited to hear Garriott speak about his belief that AI was the next frontier for games. I am absolutely confident that he is correct. However, I don't think he is taking the concept far enough, because the concept of attacking environmental spaces in the absence of triggering player-characters is really only a baby step in the transition from TacAI to StratAI.

Don't get me wrong, it's a definite step forward and I commend Garriott for taking it with *Tabula Rasa*, but it's far from the revolution in artificial intelligence required to solve The Problem of the Player of which I wrote in the March issue of *Develop*.

I don't know if it is a testimony to the games industry or a condemnation of it that after nearly three decades, one of its earliest and most important figures should still be one of its major driving forces. Regardless, we are fortunate that such an extraordinary mind is still interested in using his talents to create games and it's clear that Richard Garriott will continue to set an example for future designers in the game ahead.

The Alpenwolf *is a professional game designer who has been active in the industry for 17 years and designed games for some of the largest American and Japanese publishers. He has been known to visit Ironforge in the company of a large white wolf. design@alpenwolf.com.*

Q&A: Jonas Eneroth, Games BizDev

Jonas Eneroth is the chief operating officer at Games BizDev, which provides services to help match the various needs of game developers and game publishers. Formerly with Bungie and Eidos, he has been involved in the development of a number of respected games, including the *Marathon* trilogy, *Myth: The Fallen Lords, Thief: The Dark Project, Thief II: The Metal Age, Hitman and Deus Ex.*

You have a unique perspective, operating in between the developers and the publishers. What are some of the things that you advise developers to watch out for?
They need to look out for non-standard, non-trivial issues. It's really incumbent on the developer to find a good partner, because you are in essence entering a marriage of sorts.

You need to have good producers on the publisher's side and know that the publisher has a good understanding of your project. Spending the time necessary to make sure that it's a good fit all the way through, from development to sales and marketing, that's really important.

Have you seen problems caused by developers leaping at the first publisher to show an interest in them?
Development is very cyclical unless you're moving directly onto the next game in an existing franchise.

There can always be situations where you are a little bit too hungry.

From time to time, developers run into situations where that comes back to haunt them. I've seen that first hand from a development perspective and I've also seen it from a publisher's perspective in the realm of what we do at Games BizDev. It's something we strive to guard against.

"The project management component of games development is really coming into focus now…"

How do you help the publishers avoid problems with developers?
We want everyone to have their eyes wide open and we encourage them to do their full due diligence. We assist them in dealing with language barriers and cultural barriers, which are problems that we've come across on a number of occasions. We want both parties to be as happy as possible, but there's no point in doing a deal where one party is simply looking at how much they can squeeze the other party. That sort of deal normally leads to disaster and sub-par games. There really is no point to it.

More projects are being created with the various pieces of the puzzle being outsourced. Do you see this scattered studio model becoming more popular in the future?
There is definitely an increased degree of specialisation taking place.

If you can put together disparate groups that are lords and emperors of their one area, you can bring together finance, AI, core engine technology, content generation, and then you're looking at much more viable projects. The projects become more interesting on the publishing and the sales side, which then obviously helps them become a reality.

So, yes, we're definitely going to see more games based on this sort of structure, although it's still a learning process. The project management component of games development is really coming into focus now with the challenges posed by different teams with different cost structures spread out across different time zones.

But we're seeing really exciting projects that are coming together because these separate components can be added together into a whole package that makes sense. The publishers see that it makes sense, the various developers involved see that it makes sense and the result is better games that are more likely to see retail results.

Do you see an end to the hardware-driven cycle that Richard Garriott described in his keynote speech?
From a historical perspective, I'm in my fourth cycle and I've seen there are a number of issues that tend to come up in terms of the technology and the gameplay.

But we're now reaching a point that the money required to move to a new hardware generation with the necessary content fidelity has the potential to outstrip what the market will finance.

If you look at what retail will support, especially where some of the more favored genres like action-adventure games are heading, the amount of gameplay time is coming in between ten to 14 hours; that's radically lower than what was seen just a few years ago.

I'm still very excited on the hardware side about what can actually be done and I'm really looking forward to seeing some of the new ideas coming to fruition when it comes to AI and some of the other aspects. The position that we're in now is that we've reached a very solid visual element and we're going to start seeing more innovative gameplay, because that's where there is the most room for improvement.

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BETA

DEVELOPMENT FEATURES, INTERVIEWS, ESSAYS & MORE

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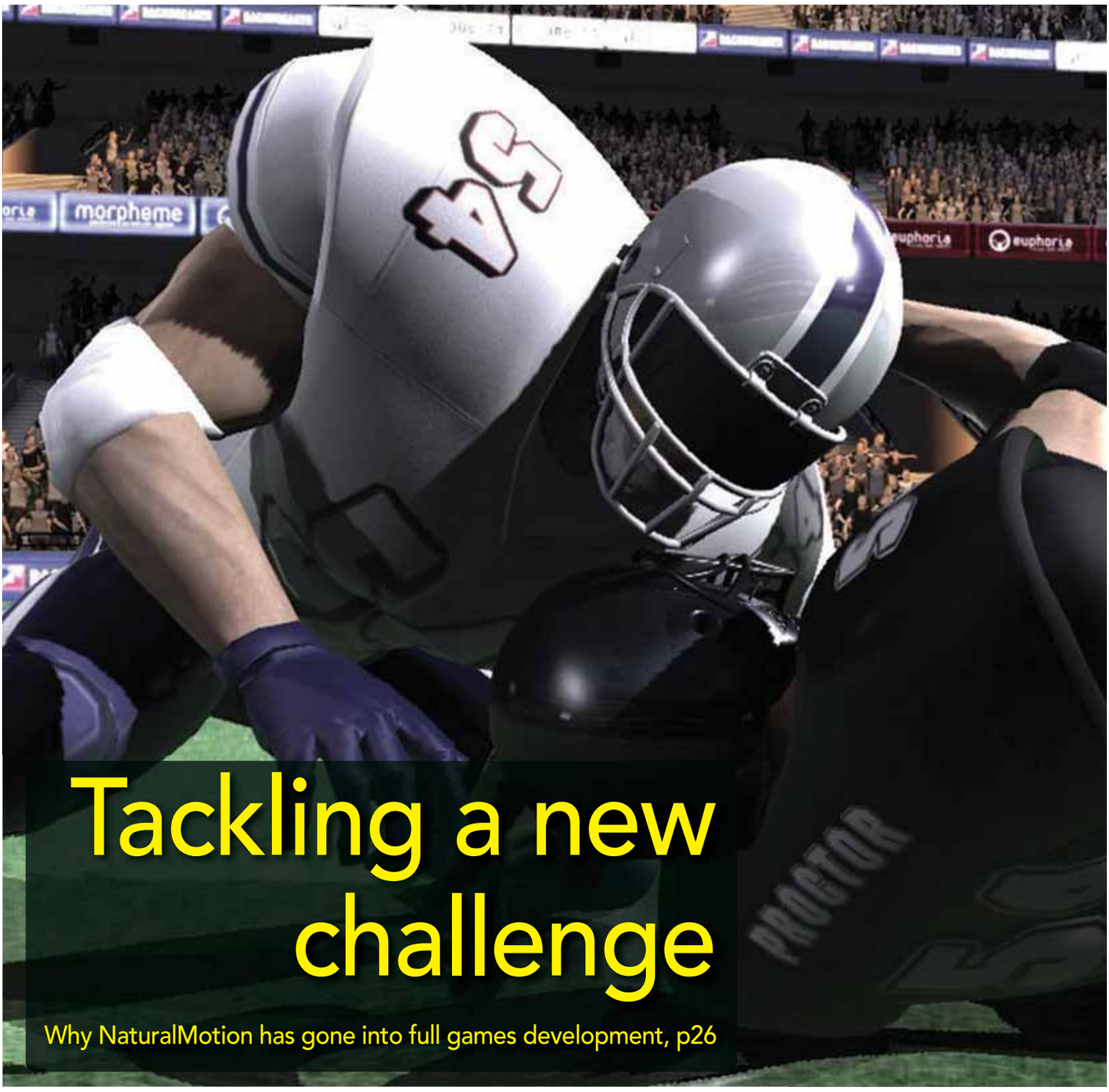


Tackling a new challenge

Why NaturalMotion has gone into full games development, p26

The Backbreaker dev team. Clockwise from the bottom left: lead designer Ant Lewis, head of games Todd Gibbs, head of games technology Dave Proctor, developer Ubaka Onyechi an lead designer Ant Lewis

TEAM SPORTS

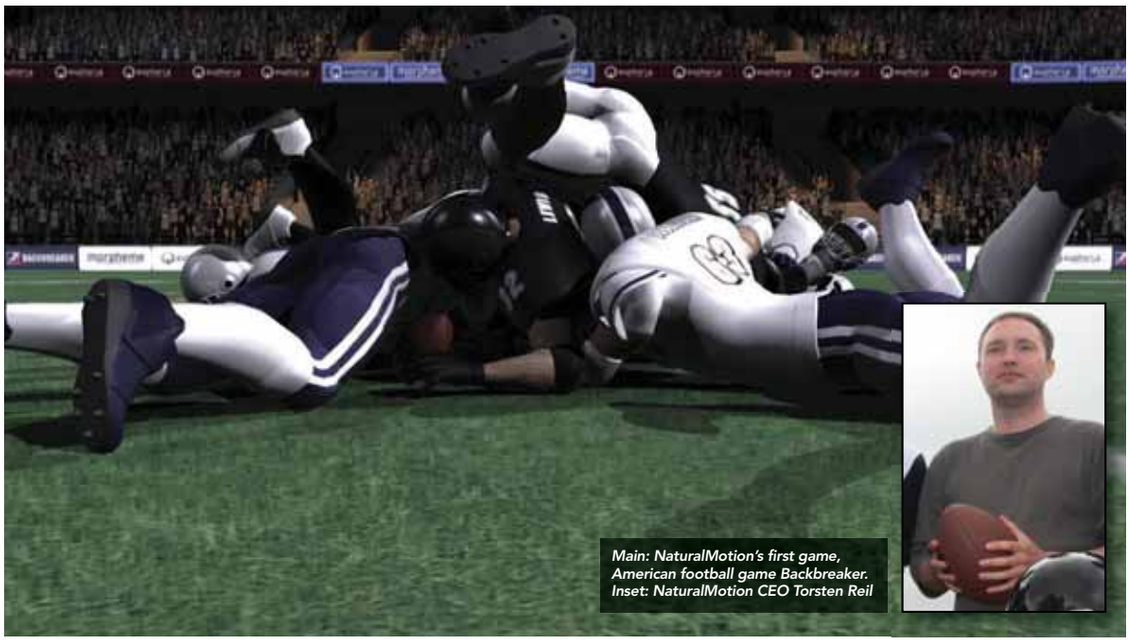
Michael French speaks to NaturalMotion CEO Torsten Reil about the company's decision to move into full game production and how procedural content is helping its small development team build a new IP…

It's not often at *Develop* that we can fit a photo of an entire game production team on our cover. Team sizes having jumped so significantly in recent years, it's even more surprising that we've managed it this month with the staff dressed in bulky American football outfits, to boot.

Then again, this is no ordinary development studio, but actually a new team of coders and artists put together by tools firm NaturalMotion to drive the company's move into full games development.

Much like the atypical nature of the team, their first title – a new IP-based American football game called *Backbreaker* – is not what you might instantly expect from a technology company spun out of Oxford University. Nor is the story behind its production – just a small team of six working on the game – what you'd expect from that same company that is supporting the release of upcoming next-gen epics like *GTA IV* and *Star Wars: Force Unleashed*.

It's a move that raises eyebrows and questions – how did the game come about? Can a tools company take on developers at their own game? And how does a technology firm make the transition to full games development without impacting its status as a popular vendor of animation solutions?



Main: NaturalMotion's first game, American football game Backbreaker. Inset: NaturalMotion CEO Torsten Reil

KICKOFF

Backbreaker's roots stretch as far back to when NaturalMotion and its animation technology debuted in 2001.

Known for creating tools that let developers create dynamic character movements (either canned animations made without mocap data using *endorphin*, at run-time with *euphoria*, or with new engine and authoring tool *morpheme*), CEO Torsten Reil says that the game came about as a way to test the software and see how far it could be used to support the production of a sports game.

"Initially it started as an experiment – can we make a top class football game that looks great with our technology, but also can we keep the team small using the most advanced technology possible?"

Early demos of its dynamic motion synthesis technology featured, by way of example, American football players performing tackles as a way to prove it worked in creating unique moments of unpredictable character behaviour.

"People said at the time 'it would be so good to get that at runtime' and to have different outcomes every time you played a sports game. We combined that with the tools we had been developing to find out what we'd need to do to make a triple-A game."

Perhaps inadvertently, the NaturalMotion team stumbled upon the lynchpin concept for an entirely new sports game for 360 and PS3, one that places emphasis on the unpredictability of action on the field rather than licensing accuracy, and doesn't use pre-baked (and arguably half-baked) animations.

The next step was to build the team itself, but the number of staff is no where near as your usual next-gen development team, nor big as the 46 men in a typical American football team and barely half the 11 on the field at any one time during a game.

Backbreaker's development team consists of five staff working at the Oxford, UK office, plus an ex-American football coach based in San Francisco who is making sure the team of Brits – already NFL and *Madden* nuts – get their gridiron game details correct. The secret to the tiny team size is procedural content, with the main component being NaturalMotion's *euphoria*, which debuted last year in demonstrations of LucasArts new *Indiana Jones* and *Star Wars* games and will be seen in Rockstar North's upcoming *Grand Theft Auto IV*.

> ***"Can we make a top class football game that looks great, but also can we keep the team small using the most advanced tech available?"***

"In theory *euphoria* can give an infinite number of character animations and tackles for the football players," says Reil. "There's not a single key frame of tackling animation.

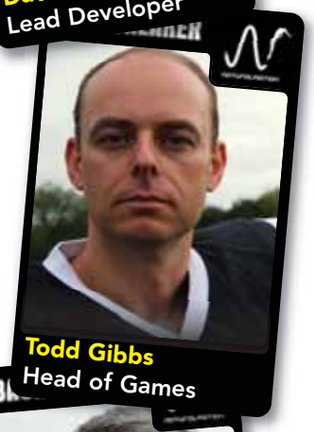
"We do use motion capture, but obviously the *morpheme* system is in there too, and that has helped with that angle," Reil adds. He says that the game's art team has focused on the locomotive animation of the on-screen players, with the rest procedurally generated by NaturalMotion's already-established software and the processors of the target next-gen platforms instead of the traditional team of 20 animators and 20 coders such productions would usually demand.

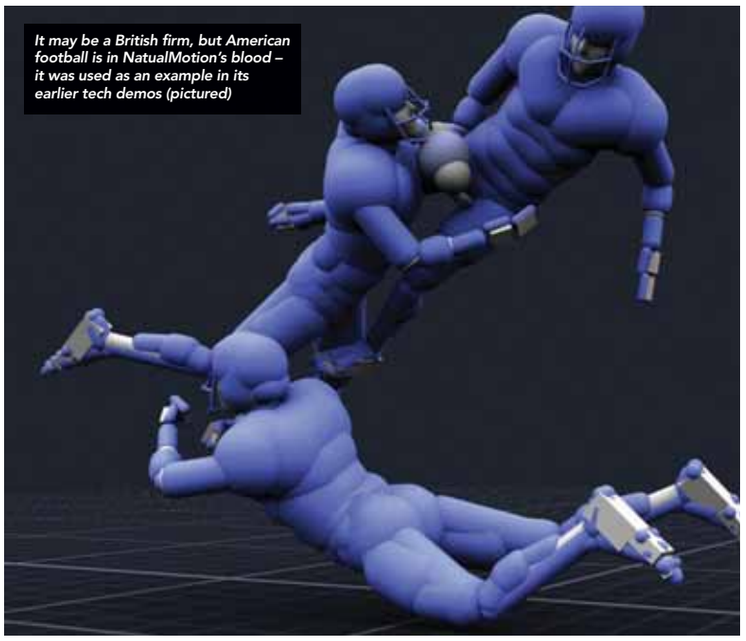
Meanwhile the on-screen environment, a larger than life football arena packed with whooping fans, is built with the team's own 'stadium renderer', boasting close to 90,000 characters rendered procedurally in realtime.

Says Reil: "The guys have done such a good job so we don't have to create so many assets."

THE ROSTER

The *Backbreaker* dev team





It may be a British firm, but American football is in NatualMotion's blood – it was used as an example in its earlier tech demos (pictured)

All of which has a great knock-on effect for the game itself – the file size is currently just 100MB uncompressed, and is already at an advanced playable state. The game debuted to a good reception from the consumer press late in August with a video shown at backbreakergame.com – all of which was recorded from gameplay straight from the game and not pre-canned animation.

PROCEDURAL INVESTIGATION

While it's clear to see *Backbreaker* as just a demonstration of what NaturalMotion's technology can do, Reil says its also a statement of intent for what the industry as a whole is capable of as procedural content specifically finds its place in games development.

"Procedural content really is the future of the industry," says Reil. "There is so much you can do procedural now it's amazing."

In fact, he argues that it's the secret to future success for UK games development companies and next-gen formats overall: "The question that interests us, and that we're trying to answer, is 'can you have such a small team and create a new IP?' I think there's such a great opportunity on next-gen consoles for smaller teams to create great content using good tools. UK developers are really good at that kind of strategic thinking – and I think we'll see more and more of that."

Developers will then be able to hand benefits on to consumers in a gameplay sense, he adds: "People have what are effectively these really powerful computers in their living rooms but they don't really yet know how powerful they are. The raw power in PS3 and 360 is great. So we wanted to do something that took advantage of that and also offered the kind of things people haven't seen before in this kind of game. Whether people take us seriously or not, I don't care – I just want to make something that perfectly suits next-gen."

He also thinks procedural content is a great way to buck the conventional wisdom related to next-gen development: "What I don't want to do is create a huge team for a new game – that's not interesting. From what we've seen when you get to 20 and 30 people on a game team you're probably at your limit. Once you get to 50 you need plenty of good project management. But on a smaller team there's much more ownership and that is good for motivation

"Of course, for something like *GTA* there's no way you could make those kind of games with a smaller team - they need that scale. But there is a place for smaller, more focused teams working on other kinds of games. So if we can create a really focused team and a brand new experience, then it's worth taking the risk."

SPORTING CHANCE

In terms of the game experience, by focusing on the wince-worthy crunch of player-collisions on the field, Reil describes Backbreaker as akin to the way *Burnout* relishes the carnage of car crashes, with a more visceral edge akin to *Gears of War*'s over the shoulder camera work.

There's a striking coincidence that his frames of reference are titles devised by two companies – Criterion and Epic Games – notorious for their dual lives as both middleware provider and games developer, which is of course also NaturalMotion's latest aspiration. Unlike them, however, Reil's company has already proven itself on a technology front via its tools, with the game coming second. How does the company plan to juggle that transition, especially when it's targeting a category – American football games – that is both narrow and fiercely dominated by Electronic Arts and its Madden franchise?

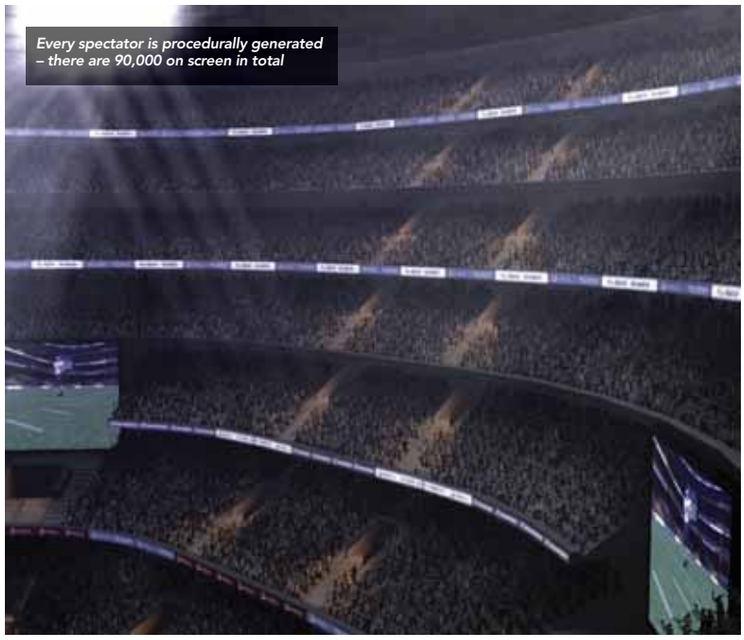
"We're not trying to compete with *Madden* or EA because they know what they're doing – and our guys play *Madden* all the time, we're big fans of the game. It would be foolish to think that we'd even take a single game from *Madden*," he explains.

Backbreaker is intended to succeed via its stark difference to *Madden*, focused on the bigger picture of American football tactics, by providing its own game changer to the games industry playing field: "What we do hope is that there is an experience in American Football that we can capture, different to *Madden*, which people will enjoy playing."

It's potentially something, should Backbreaker prove a success, which can be proven in other sports genres too. If the game and its interactive tackles can be a good alternative or companion to *Madden*, what about a treatment of the other kind of football, or another sport? "In theory, yes, it's something we could do. Although right now we're focused purely on Backbreaker – in many respects it's still just an experiment because we're doing things so differently and things are so small."

Either way, the key will be to "do something about the same subject but approach it differently," adds Reil. After all, he says, car game fans buy both *Burnout* and *Gran Turismo*, as do FPS players.

And on the subject of buying Backbreaker, a smaller file size obviously lends itself to Xbox Live Arcade and PlayStation Network direct-to-consumer distribution – although Reil says it's too early to call on what may happen between now and the 2008 arrival of the game. "Yes, procedural content lends itself to digital


Every spectator is procedurally generated – there are 90,000 on screen in total

"If we can create a really focused team and a brand new experience then it's worth taking the risk…"

distribution but it's probably too early to say at the moment where it ends up," he says, but adds that whatever option the company chooses, he expects that "we will publish the game ourselves.

"We have a very well funded technology business so I think we have lots of different opportunities on what we can do – I will keep an open mind."

It's a shrewd move, perhaps, because for all the talk of smaller teams, it's clear NaturalMotion has paid attention to the bigger studios as well, especially those – such as Traveller's Tales, Harmonix and Bioware/Pandemic – that are now seeing traditional publishers as just a means to an end for distribution and some marketing.

TACKLING TECHNOLOGY

But publishing and development, however, is still a far cry from what NaturalMotion is known and has a proven reputation for (and won a *Develop* Award for in 2006, even) – so how is that going to effect the company?

It isn't, says Reil. On the software front, current and potential customers shouldn't worry, he says, downplaying the new expansion a little when the subject first comes up: "We are a games technology company that is growing and growing, so we're now just a content creator as well."

When the subject of the comparable Criterion comes up again, whose acquisition by EA eventually put paid to its widely-used Renderware tool, Reil says that Backbreaker isn't part of an 'expand and sell' plan to cash-in with, either.

"We made a decision about two or three years ago to remain independent," he says. "The thing we want to do is build a strong company. We're not in the business of building the company only to be acquired."

And Reil's happy to address the allegations floated about other studios with middleware or tool interests head on, stressing that the company has been particularly keen and careful to make sure that *Backbreaker*'s development team is treated like a separate company within NaturalMotion.

"What we've been quite careful in doing – because obviously the main business of the company is technology – is to ring the game team off from the guys working on euphoria and morpheme," he says.

So when there's a support issue or technical request the five-strong *Backbreaker* team are "treated liked like just another customer" and their query is placed in the queue along with those from NaturalMotion's games and movie partners.

Of course, having a game team in the room next door has meant "really good, quick feedback" on the technology speedily benefits the company's customers, but the emotional distance during work hours means *Backbreaker* hasn't put any kind of drain on the technology team. "We're hypersensitive to that. Technology is still our core business."

TOUCHDOWN

Ultimately, however, it seems that technology – while a great enabler for what Backbreaker is designed to do – isn't the only driving force that NaturalMotion wants to share with the rest of the industry, it's proving that new, big triple-A-aspiring ideas that break against conventional thinking can make it to market, from teams that may be viewed as unfeasibly small. It's a message he seems to genuinely want the rest of the industry to take heed of.

"There are plenty of ideas around and passion to do this," says Reil. "A lot of people say with a new IP and securing investment you have to make your game with an online component or it has to be an MMO – I don't think that's true. Investors, particularly in the UK and the US, are pretty clued up on what they want.

"So the more UK start-ups the better. There is so much talent in the country and great opportunities. It's great that there are big publishers in games development in the UK, but it's incredibly important to have an ecosystem of good companies that hopefully grow and become much stronger."

www.naturalmotion.com

QUALITY control

QA teams across the industry need to focus on professionalism, says Electronic Arts UK's testing boss Chris Ambler…

It's safe to say that making quality software has always been a paramount priority for the games industry.

Having been involved in testing many things in many industries, games are certainly the hardest I have come across. But what's most obvious to me is that when it comes to QA we need to make sure that both the overall 'quality' of the game and the usual process of debugging via 'assurance' is dealt with. Assurance shouldn't be about 'bug detection' but more about 'bug prevention'.

To some, quality is about removing bugs and to others it is about gameplay experience. As a QA function, we need to support both. We shouldn't lose focus in bug finding and smart testing processes and obviously need to stay on top of the certification needs of the platforms, but as we get better at this, games teams will be keen to utilise us more around the qualitative side of the products.

"We mustn't lose sight of the fact that quality is everyone's responsibility…"

However, QA still has – and this is in any organisation, in any industry – a bit of a 'perception' problem, often seen as the bottom of the pile. Traditionally in the games industry, the mix of people in QA consists of some career testing folk, some people looking for temporary work and a large amount of 'industry hopefuls' who are looking for a way on up to the wider development and production world. This does foster a perception that QA is not important and is full of people who don't know what they are talking about; just providing a games coverage service and putting a tick in a box.

And this has a habit of becoming a self-fulfilling prophecy – why hire the best designers in the industry, develop the best code, use the cream of the development industry and the latest production techniques and practices, but then Quality Assure the products using students and temporary staff?

TESTING TIMES

Instead, designers should stop looking at testing as their poor cousin. Quality is an important facet of our products and needs to be taken seriously throughout the whole design, development and production lifecycle. QA can offer lots of skills and understanding in these areas, as testers tend to be gamers with a wide repertoire of experiences, as well as having bug finding skills. Having people 'focused' on quality (both qualitative and quantitative) from the start allows the creative people to concentrate on being creative, knowing that someone is 'watching their backs' from a quality perspective.

We mustn't lose sight of the fact that quality is everyone's responsibility, and one of the major roles of a good QA department is to keep re-enforcing that message.

A QA department may have up to 1,000 years worth of cumulative games experience, and most testers understand what works and what doesn't. I realise it's not feasible for producers to listen to individuals about detail, but there are ways to capitalise on the collective experience of the testing department. It is our job as QA professionals to make ourselves heard.

At the same time, there is much to be done to improve QA practices across the industry. We can work both as individual departments and as an industry to create a professional career for the people within QA. Also, standardising our processes (as much as we can – staying away from the competitive edge) would help us all to develop stronger product and allow us to create standards for which we can train our people to create a world class QA industry. Bringing some rigour to what we do, and benchmarking our skills and abilities utilising an industry group, would benefit both the people within testing and the games teams we support. I am currently working on this concept with other industry QA leaders and intend to launch a group by the end of this year. It is imperative though that these initiatives are supported (and funded) by the studio leaders and the games teams who should rely on our support.

QUALITY STREET

I am a pragmatist and I know that the road ahead for QA to face these issues will be tough. Developing these ideas has been done before. In my past experiences in the more 'traditional' testing arenas like banking and telecoms we faced the same challenges ten to 15 years ago and to a certain extent conquered them. We should learn from those experiences and not go through the same pain again.

***Chris Ambler** has been in the testing industry for over 20 years, and is currently QA Director of Electronic Arts Europe and a member of the EA World Wide QA Council. In his previous roles Chris has managed and consulted on many testing projects across fields as diverse as defence, finance, telecoms and government.*

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*All models shown are rendered by our in-game engine

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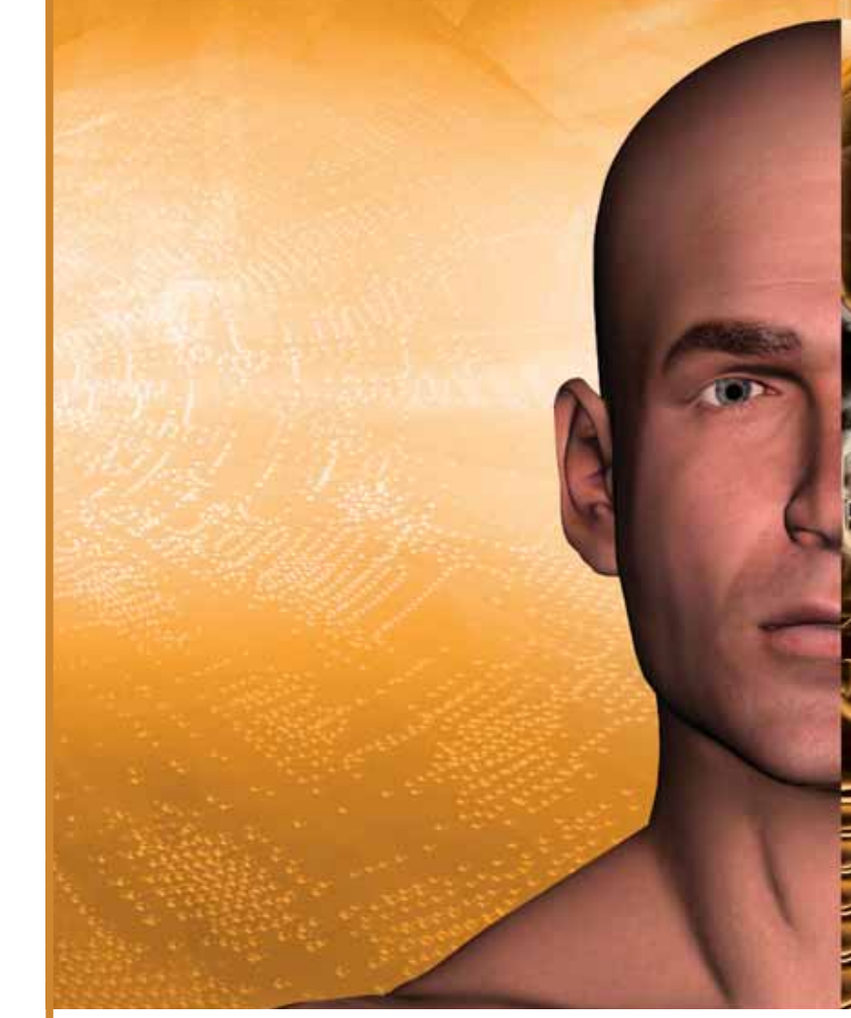

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CASUAL and effect

Black Rock Studio's Serkan Hassan provides an invaluable glimpse into how the team behind critically-praised franchise MotoGP recently aimed to please both casual and hardcore players with its latest release…

As a design manager at Black Rock Studio, I've been working in the driving and racing genre for seven years. However, one of the most significant challenges I've faced has been in the development of *MotoGP'07*, the latest in our award winning series of motorcycle racing games on the Xbox 360 and PC.

The rise of the casual gamer has led to a change of tactics by many publishers, as we all now look at ways in which to develop and market titles that appeal to the most rapidly growing demographic of games player. Naturally this is of interest to us but the challenge with *MotoGP'07* was taking a series of games that are renowned for difficulty and making them appealing to new players.

But of course, things are never that simple. Our games are generally considered to cater for a niche market. Whilst this may seem like a disadvantage, the critical and commercial success of the *MotoGP* franchise suggests otherwise, with each new title in the series selling more than the last. This is largely down to our hardcore fans, gamers who have been playing our games since their original release on the Xbox – the kind of players who make us look like amateurs when we race them online.

This was the challenge that we at Black Rock Studio faced. How do you broaden the appeal of a series without betraying your existing audience? How do we take a motor sport that's among the most exhilarating, dangerous and unforgiving in the world and make it a compelling game for both bike rookies and experts?

CRITICAL MASS

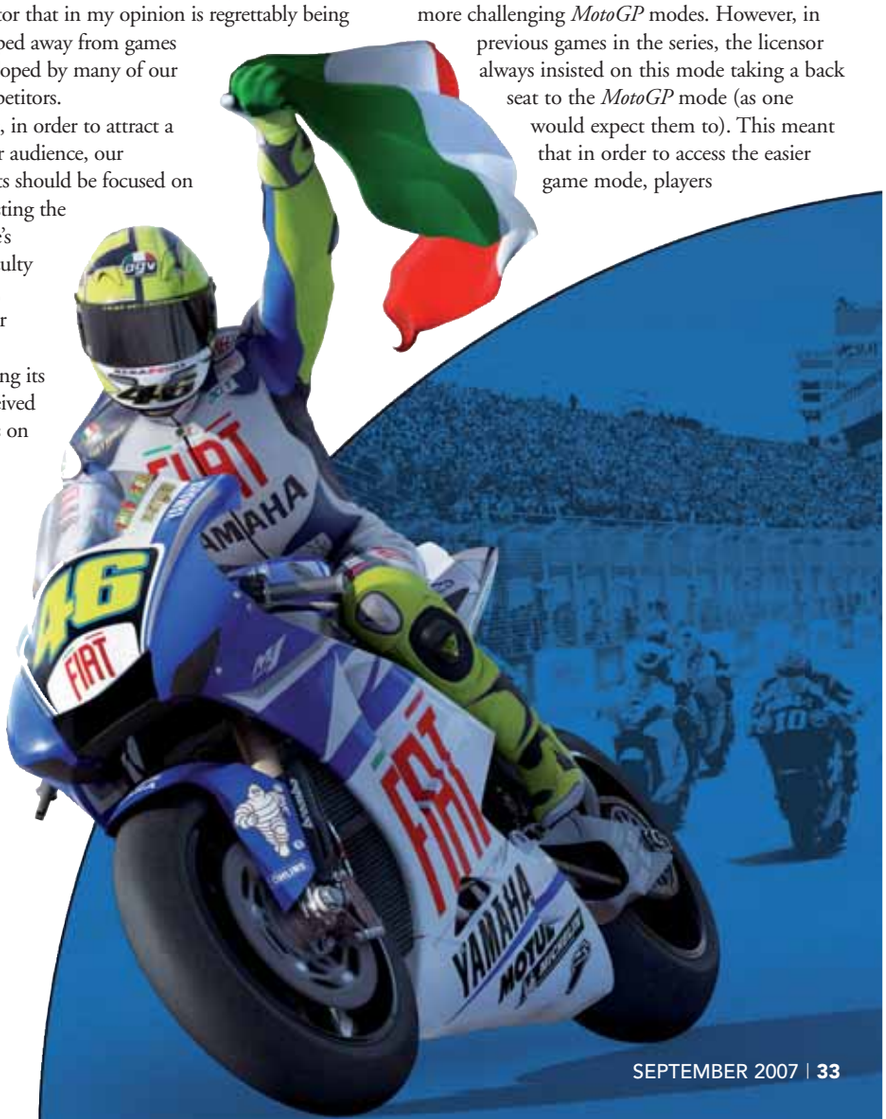
One of the first things I wanted to assess was the media's perception of our games. This brought up a range of interesting issues. Read any review of one our titles and the word "simulation" is frequently used, with repeated reference to how the game is for the "hardcore" gamer.

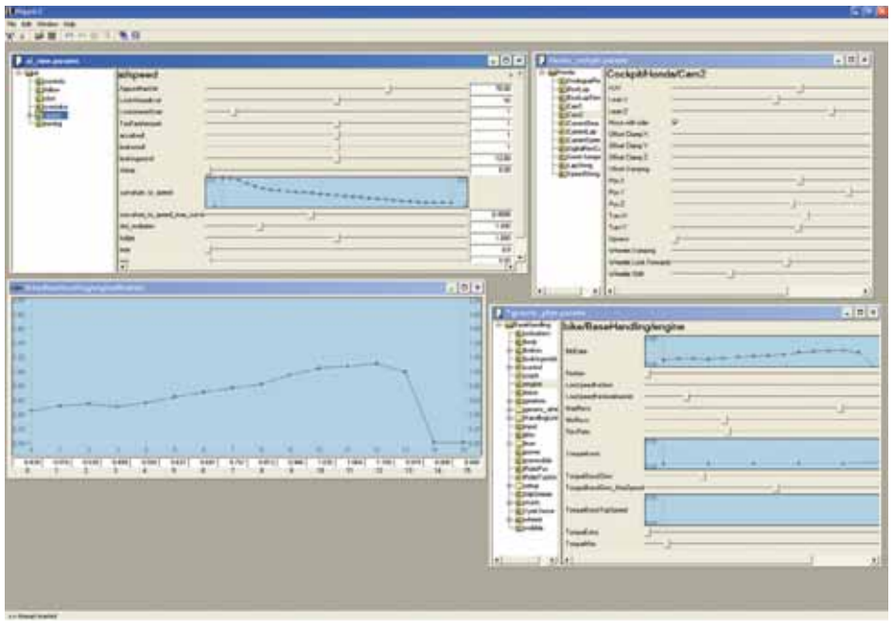
It's the use of phrase "simulation" that bothered me the most. Too often in my opinion, this term is incorrectly used, more often an indication of a game's difficulty level than actual gameplay. In my opinion, our *MotoGP* titles have never been what I would call simulations. In many respects they are arcade in nature, albeit with plenty of challenge.

Let me explain my reasoning. In my opinion, simulations capture both the positives and negatives that come from racing. It's because of this that I don't consider our titles to be simulations. For example, licensing restrictions mean that should you crash; neither the rider nor bike will suffer any damage (terminal or cosmetic). In fact, as soon as the dust has settled you'll be back on the road with a fresh bike and rider. Engines never fail and bones never break. Without the consequences, players are free to race in a more aggressive, flamboyant, dare I say it arcade-like manner. For some people, it's the skill required to control the bike that makes the game a simulation, a factor that in my opinion is regrettably being stripped away from games developed by many of our competitors.

So, in order to attract a wider audience, our efforts should be focused on adjusting the game's difficulty level, rather than shifting its perceived focus on simulation. There were a number of ways in which we've achieved this, whilst simultaneously preserving the core values of the game that all our hardcore fans desire.

First of all, we looked at the role of the game's Extreme Mode. For the uninitiated, this mode was introduced earlier in the series in an attempt to give newer, more casual players a more forgiving bike handling model and tracks that were simpler to learn. Set entirely on fictional tracks and with original bikes, this mode was intended to be the perfect accompaniment to the more challenging *MotoGP* modes. However, in previous games in the series, the licensor always insisted on this mode taking a back seat to the *MotoGP* mode (as one would expect them to). This meant that in order to access the easier game mode, players





would have to complete a championship in the harder, real life mode. For *MotoGP'07*, we managed to convince the licensor that allowing players to access Extreme mode from the start would be hugely beneficial to the enjoyment that new players would get.

INTELLIGENT DESIGN

The next challenge for us was tackling each of the game's difficulty settings. In *MotoGP'07*, difficulty is measured purely by the AI rider's capabilities. With four difficulty levels in the game, we have all the range required to make the game sympathetic to the novice whilst uncompromising for experts.

Using our in house tool, Nipple (*pictured above*), the design team at Black Rock had the power to adjust a vast range of AI attributes in real time during gameplay. For the easier difficulty settings, limits could be applied to AI riders in order to prevent them rider at their best. Attributes like rider aggression, spatial awareness and riding form could be tweaked in order to get a range of effects.

At the lower difficulty levels, AI riders will be happier to follow in another bike's wake, making little use of the track around them. At the higher difficulty levels, Nipple enabled us to completely change AI behaviour, the result seeing four or five AI riders all diving into a corner at the same time, missing each other by a fraction. The difference in AI behaviours achieved by our tools really is quite breathtaking.

Our focus on AI was because we have always believed that the handling model should not change as a result of changing a difficulty setting. *MotoGP'07* is a racing game, plain and simple. If you dumb down the handling, what have you got left? Nothing irritates me more than when I play a racing game and find that there's nothing beneath the surface. When that initial thrill from racing has passed, the lack of depth or challenge is something I always find a huge disappointment. Too many games substitute this for a more asset driven approach, bombarding the player with new vehicles and tracks to race. If the core gameplay is shallow, where is the motivation for repeat play?

In terms of judging our difficulty levels, we encouraged play testing, in particular from as wide a range of players as possible. We had complete newcomers to the series testing our 'Rookie' difficulty level, whilst the most experienced members of the team took on the challenge of our 'Legend' difficulty. The flexibility of our toolset was pushed as we found that difficulty had to be tweaked on a per track basis. Faster tracks are more challenging when racing AI whereas on slower tracks, players could make up more time under braking.

> ***"The rise of the casual gamer has led to a change in tactics by many publishers..."***

REGAINING CONTROL

Having addressed the AI difficulty level, we looked at other aspects of the game, such as *MotoGP'07*'s unique controls and game settings. Many questions were asked. Was the default camera view ideal for new players? Was the default bike setup easy to ride?

As a result of this review, we made a range of changes designed to make things more accessible. Most notably, we changed the default bike set up to be as easy to ride as possible. Tyres, brake balance, suspension settings and wheelbase were all setup to make for the most forgiving ride. It was obvious that new players were not going to be able (or willing) to tune a bike for more forgiving performance so we took the step of doing that for them. In contrast, we knew that our existing audience were overwhelmingly familiar with the tuning options, so whatever default setup was available, expert players would tinker with it anyway.

We next looked at what we could do to give inexperienced players as much feedback as possible during racing. We designed a simple to use telemetry system that would break each track spline up into segments and time the player through each one. Each spline segment would then be colour coded and displayed on the HUD track map during gameplay. At a glance, players could see how their lap was shaping up, where they had made gains and where they had made mistakes. It's a very simple system but one which is beneficial to players of all skill levels. It also acts as a good reward system for players, who can take positives from a race even if they don't win it.

With the changes made to accommodate new players, we then turned our attention to our returning players.

One of the greatest things about having an online community is the wealth of feedback they are always willing to give you. We looked at every review, checked every community forum and message board and compiled a comprehensive list of feature requests.

A significant thing to come from this was the demand to make the game more challenging. With the structure of the game we knew we could achieve this without impacting on the game's accessibility (once again, the benefit of player scalable difficulty settings). As a result, all new simulation settings were introduced, designed to compliment the existing handling model. Off track handling was made less forgiving, collisions more punishing and traction levels reduced, all designed to provide a greater challenge for the most experienced players.

REAR VIEW MIRROR

Looking back now, I feel confident that our team at Black Rock Studios has achieved our objective. *MotoGP'07* is without doubt the most accessible game in the series to date, whilst simultaneously enhancing its feature set for the benefit of the most experienced players. With motorcycle racing games so often being considered a niche market, we believe that our final game in the series is perfectly suited to all racing fans and gamers in general, casual or hardcore.

The *MotoGP* series will always be one that we look back on with great affection, as it has been synonymous with our studio for so many years. However there's a bright new future at Black Rock Studios, with great excitement at the original games we are now busy at work on.

www.blackrockstudio.com

Serkan Hassan *is a design manager at Black Rock Studio, located in Brighton. He was worked in the games industry for ten years on a wide range of games for consoles, in particular racing titles.*

Control Your Career

HOW GRADUATES MAKE A DIFFERENCE AT ELECTRONIC ARTS...

If you ask me, graduates are the saviour of the games industry.

Currently, there are not enough experienced game developers to feed the current recruitment demand for gaming. And all forms of entertainment – be it games, film, TV, toys, music, advertising or even sectors as diverse as IT, mobile, and banking – are all fishing in the same talent pool.

All too often in games graduate entrants have been perceived as cheap labour. However, EA sees graduates as the very engine of creativity.

Plus, many companies are scared to hire graduates in any volume because they need quick results on their current game which ships in a small period of time. However in our experience it's great to see the effect graduates have on the culture of the business as experienced staff feel the graduates snapping at their heels, making them raise the bar of their work, which engages and then ignites a healthy internal promotion culture.

We cherish the natural hunger, zest and passion that graduates possess that make a real difference to a business. Graduates challenge the status quo and constantly seek to learn, relishing the pace of our fast moving industry.

Across the next three pages, we've outlined our graduate strategy and spoken to some of our latest hires to show how newcomers can make a difference in the games industry.

Matthew Jeffery
Head of European Studio Recruitment

ELECTRONIC ARTS – GRADUATE STRATEGY

Our approach to graduate recruitment is anchored on targeting selected preferred universities to partner with, where we have experience of hiring high quality graduates that are not only taught strong traditional technical skills, but also have strong soft skills. These include communication skills, presentation skills, leadership skills and vitally, since games are not made by one individual, team working ability.

Experience has shown that students benefit from the extra focus and resources we can provide, and of course EA gets a closer appreciation of high performing students on particular courses and hopefully attract them to help us continue creating world class games.

But this does not mean that because a graduate is not in one of the EA Partner Universities that they won't get into EA. As long as they apply via jobs.ea.com and get themselves known, their chances are still high to work at EA.

GRADUATE ENTRY POINTS

Given our commitment to hiring graduates we provide several entry points, most notably internships and permanent roles.

INTERN SCHEME

Each summer we run a three-month intern scheme, which neatly fits into student's summer vacation. We generally offer students who are one year away from graduating an insight into real life work on a game team. This is a serious investment for EA to run with 20/25 interns each year and therefore a structured program is put in place. There is no room for menial tasks like filing or photocopying.

Each intern is set a project which will be in the final game. The intern is assigned both a manager to steer them in their three months and also a mentor, (who supports the intern throughout the experience like a confidant or buddy).

After the three months the intern is reviewed and often receives an offer of a job for when they finish their exams.

Internships are a great way to give insight into development at EA and are effective in attracting people sceptical about a career in games into trying it out for themselves for three months. All internships are fully paid, as they are completing valuable work and their names are included in the credits for the game they worked on.

PERMANENT ROLES

Key for building a healthy workforce is attracting graduates into permanent roles. We provide a competitive remuneration package which includes a host of benefits.

But money is not everything and graduates need to feel that they not only have a good job but a long career within EA. That's why when they first join they partner with their manager and work on setting goals, objectives and achievements. These are reviewed every three months and built into an effective way to ensure graduates have the best support network.

"Graduates should be proactive. It's your career and you have to stand out from the traditional run of the mill sheep…"

EA ensures that graduates benefit from a dedicated in-house art and graphics trainer and a programming trainer. Graduates also learn from EA Knowledge, EA's worldwide intranet of training material where any member of staff can post and share best practices.

WHAT ROLES ARE AVAILABLE?

The biggest need in the industry is for programmers. Programmers can be split down into a variety of disciplines including AI, physics, audio programmers, gameplay and tools, to name but a few. A talented programmer can cherry pick the role with any company in the games industry.

In art we look to recruit concept artists, animators, both world and character modellers, texture artists, technical artists, CG and VFX artists.

Games designers are a lot harder to identify and assess. We look at those who are successful modders and, of course, those that can provide game design documents. A common misconception is that, just because you play games, you'd make a great game designer. Design is a very natural skill as it involves creativity but also a logical thought process, to ensure that a game and a story has real cohesion and consistency.

HOW DO I APPLY?

Graduates should check out our web site: **www.jobs.ea.com**. All live vacancies are posted immediately and CVs can then be logged to apply for jobs. The site sends an email alert the moment a role fitting your needs is posted and open to apply for.

Secondly, graduates should be proactive and get themselves known to EA staff and get champions within the business. Be proactive and go to trade shows like the Game Developers Conference, the Develop conference, Leipzig, London Games Festival and get yourself in front of EA staff.

It's your career and you have to stand out from the traditional run of the mill sheep.

ASSESSMENT PROCESS

The interview process is very thorough.

Programmers have to sit a tough assessment test, which is a mix of maths, physics, programming and general logic, and then face a technical interview with a lead programmer or tech director. The graduate will then meet the senior team.

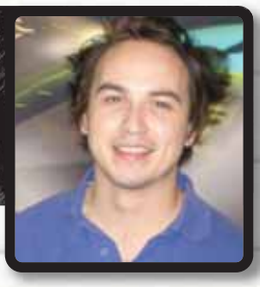
Artists will be reviewed against the quality of their showreel and be interviewed by Art Directors about how they have achieved particular effects and then, again, senior leaders on the team will interview for team fit. Showreels need to demonstrate a range of different styles and because we receive so many we encourage artists to consider this: if we view your showreel for 20 seconds, does it hook us and show your best work?

Game designers will be set a presentation task to firstly play an existing EA game and then give their views on it and how they would improve it. They would then be expected to give a game pitch of a new idea or pitch what is their favourite film and why. This allowing us insight into their thought process, games knowledge and ability to be creative.

Only the best graduates get to work at EA. That is pivotal to our selection process and the success of our games.

GAMEPLAY PROGRAMER

NAME: GARRY CASEY
AGE: 26



Currently working on: *Burnout Paradise*

What course did you study?
I actually attended several courses at the University of Teesside from 2000 to 2005 which included a HND in Software Development, a BSc in Computer Science (2:1) and an MSc in Graphical Programming (Distinction).

Did it equip you for your career in games?
I always had a long standing interest in video games, but before university, I knew nothing about creating them (this also included no formal background in software development). During my time at Teesside I was happy to find that each course provided me with a foundation in a wide range of subject matters (many of which applied the use of different programming and scripting languages).

My final course focused this into the computer graphics arena which eventually led to me creating a video game of my own for one of my modules.

What attracted you to working at EA?
I initially sent an application form into Criterion Games who are now owned by EA. I have always been a huge admirer of the games they make and loved the idea of working for a team that always strives to go the extra yard in terms of quality. EA Criterion has some of the best people in the industry from all disciplines and as a result, I always find that I'm learning from my peers on a day to day basis. Also, it helped that I'm a huge *Burnout* fan!

Since joining EA, how have you made a difference on the game/project you are working on?
When I initially joined Criterion I was a tools programmer for around nine months. This was a challenging role due to the dynamic nature of the job: one day I could be using C# within our content aggregation tool, the next I could be using MEL script to help the artists for a given task.

After that I was asked to join the gameplay team. I've done a number of different things including creating game modes, implementing parts of the progression and being instrumental in creating the new *Burnout Paradise* boost system.

What advice would you give to students about to join university and those graduating?
Be proactive when trying to find a job in the industry. If you are finding it hard to get interviews, try to get a solid game demo together that showcases a number of different talents. I created a complete game for the PC that used DirectX. It was a simple tribute to a popular space shooting game and showed that I had the commitment and passion to finish such a project in my own time.

TOOLS PROGRAMMER

NAME: CIARA WILLIS
AGE: 26

Currently working on:
A phenomenally exciting new IP.

What course did you study?
I did a BSc in Computer Science at University College Dublin (UCD). After UCD I did my MSc in Informatics in the University of Edinburgh, specialising in Intelligent Robotics and Machine Learning.

Did it equip you for a career in games development?
I have always loved playing video games, but I never really knew anything about how to make them. Before I started university I had no knowledge of programming at all. My undergraduate degree was invaluable as it taught me the basics in a wide range of topics, in addition to allowing me to specialise in AI. I feel that studying in a general computing course rather than a games specific course was very worthwhile, as many of the basic principles that I learnt are applied to my work almost every day. In particular the focus on maths and different programming methods (and languages), has been essential.

What attracted you to working at EA?
I initially joined EA to work on *Harry Potter and the Gobet of Fire*. I have always wanted to work in games and I am a huge Harry Potter fan, so this was the ideal job for me really. In addition to this I liked the fact that working for a company like EA means that you have the opportunity to work on a large variety of games, in a number of locations around the world.

What advice would you give to students about to join university and those graduating?
Do not be put off applying for jobs in the industry if your degree is not games specific, as many general degrees, such as computer science, teach you the foundations and more than equip you to take on a job in the industry.

Also, take the time to keep up to date on what is going on in the games industry. If you have a passion for games and know what is going on in the gaming world then this will show in an interview.

Since joining EA, how have you made a difference on the game you are working on?
When I first joined EA I was working as a gameplay programmer and I was responsible for creating many of the in-game interactive items. On the last *Harry Potter* project I was the pipeline owner for all of the in-game cutscenes. I integrated a tool that had been developed in Electronic Arts Redwood Shores, and implemented the runtime for this tool. I was responsible for the integration of every cut scene in the game, which in a movie franchise is key.

INTERFACE DESIGNER

NAME: AMRITA BHARIJ
AGE: 23

Currently working as: An artist on the *Harry Potter* franchise.

What course did you study?
I graduated in 2006 from Abertay University where I studied a BA (Hons) in Computer Arts. The course covered different areas from 2D to 3D animation, video art, interactive art and web design, allowing freedom to choose the area of study in the last year.

Did it equip you for a career in games development?
I was given opportunities that I may not have had otherwise. One of which was a three-month scholarship working with Scottish Television. The other was the competition Dare to be Digital, where teams of five come up with ideas and develop demos in the space of ten weeks. I took on the role of character animator and interface artist for my team, and getting advice from industry experts, working to tight schedules and, most importantly, making products which people enjoy playing was awesome. The contest was an enjoyable experience and a great link between university and the working life – that's when I decided games were for me.

What kind of training have you had since joining EA?
After being here for eight months, I have learnt quite a lot. There are courses available for artists and engineers to better their skills. I 've also learnt from the art director on the project, as well as experienced artists. Soon I'll be taking some classes in the EA University, too.

Do you feel you've made a difference on your first project?
I do feel like I've achieved much in the short time I have been here. I feel lucky to have worked on a successful game that is sought after, and have my name on the credits so soon after graduating.

I also feel a great sense of achievement by helping out in the South East centre for this year's Dare competition, which was hosted at EA's studio in Guildford. As I participating in it last year, being a mentor and helping the new Dare students with their interfaces was an honour.

What advice would you give to students about to join university and those graduating?
For all the students and graduates who have a passion for games and wish to break in the industry, based on my experience so far, I recommend researching exactly what leading games companies are looking for. Think of a particular area to get into and really perfect that one area, and work up a top portfolio even if it means giving up your social life for a while.

I've found that competitions such as Dare to be Digital are great ways of demonstrating skills when applying for games jobs, just by having a game or a demo ready to present.

DESIGNER

NAME: SANDY LOCKIE
AGE: 23

Currently working on: Exciting new IP.

What course did you study?
I chose to study Contemporary and Creative Writing (with a side helping of Film and Television Studies) at the University of Derby which I really enjoyed.

Did it equip you for a career in games?
Creative writing for me was a very feedback heavy course, both from tutors and peers alike, and that was definitely the most useful aspect I took out of my time at Derby. The self-motivation of coursework and the melting pot of ideas that circulates around your social group are both incredibly useful, but the ability to both give and receive constructive feedback is invaluable because you soon learn to pre-empt the usual criticism and start really polishing areas of your work.

What attracted you to working at EA?
I actually came into contact with EA when I was researching for my dissertation, a study into how effective computer games can be as a storytelling medium. What was initially set to be a quick one hour chat turned into a whole morning of tours and presentations; it was the flexibility, friendliness and passion of all the people I spoke to that morning that really got me interested in EA as a company.

What kind of training have you had since joining EA?
I originally came to EA as a graduate Development Manager, however after a month or so I was approached by a couple of the leads and offered the opportunity to become a Junior Designer, presumably because I didn't shut up in brain-storming meetings!

I leapt at the chance and haven't regretted it for a second – but those early few weeks really helped me with the organisational side of things. I became familiar with creating and updating trackers and using Visio to create flowcharts.

Then, once I started as a designer, I could build on this knowledge and become acquainted with a variety of other tools and programs such as SketchUp and dabbling in Blitz Basic. Plus, I've had ongoing training from peers and my lead in how to become a better designer, present well, and to think ideas through. I see my job as ensuring the game is as fun as possible; the training I've received has allowed me to realise this.

Since joining do you feel you've made a difference on the project you are working on?
I've spent my first year here just soaking up as much information as I can about all areas of game production, not just my discipline. I feel that now, around a year after I started, I'm getting to the stage where I can take ownership of areas and become the go-to guy on any issue related to it.

BUILD

THE LATEST TOOLS NEWS, TECH UPDATES & TUTORIALS

"It would be massively difficult and expensive to create a competent engine from scratch now..." p52

TOOLS: The latest releases

p40

GUIDE: 3D graphics cards

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SOUND: Harry Potter game audio

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Start your engines

SPECIAL REPORT: Game Engines, p50

WILL OPENKODE SAVE MOBILE DEVELOPMENT? > P54

The wisdom of Solomon

IF EXPERIENCE TEACHES US anything, it's that the most useful analytic skill is seeing the trees for the wood. Detail is all well and good, but despite those purveyors of alternative history – what if Winston Churchill had been properly run over by that New York cab in 1931, etc.? – in the final summation, it's rarely the crucial factor.

Cunningly, this philosophy also allows us to avoid secondary ligitation when it comes to the swirling legal malaise that promises to be the Silicon Knights/Unreal Engine 3 suit and counter suit.

Instead, we can skate away untouched, purely noting that the significant detail (whichever way the gavel falls) is that middleware's status within the game making process is now considered significant enough to be cited in a multi-million lawsuit. After all these years, surely that has to be seen as some sort of coming-of-age symbol, even if it's a somewhat brutal Bar mitzvah?

But it also strikes me there's something deeply ironic about the situation. All the time I've been writing about technology, I never met any purchaser of external middleware who's been even lukewarm, let alone enthusiastic about the technology they've been offered: and that pretty much includes every game engine that's ever been offered, whether RenderWare, Gamebryo, Quake, Source, Instinct or Unreal. There's always something some coder think they could have done better.

Of course, that's not to say that the legalese that presumably forms the basis of any middleware licensing agreement is worthless. Only that the lines are much greyer in this case than comparable industries. Personally, I feel sorry for the judge who has to cut the Gordian Knot concerning how many SPUs code needs to run over to count as being functional.

Jon Jordan
jon.jordan@intentmedia.co.uk

‹ ART ›

DOUBLE UP ON HALF-LIFE

Softimage, Valve and Microsoft combine to offer a complete modding pipeline…

THE COMBINATION OF VALVE'S *Half-Life 2* gaming technology and Softimage's art tools have prior form when it comes to offering the modding community the opportunity to get all creative.

It was back at the tail-end of 2004 that the original XSI Mod Tool was released. Like Autodesk's similarly-conceived Gmax approach, it didn't get much traction, though, because in order to use the technology modders had to be able get down and dirty within Valve's Source engine SDK; something many full-time developers have struggled with.

Moving on a couple of years though and the emergence of Microsoft's XNA platform has narrowed the gap between professionals, prosumers and gamers, at least for any of the latter interesting in spending some time hacking around to find out what makes games work.

That, combined with the imminent arrival of Valve's latest *Half-Life 2*-based release, *The Orange Box*, should give Softimage's announcement of its XSI 6 Mod Tool more significance.

The free 3D modelling and animation software, which is locked down for non-commercial use, integrates natively with the XNA Framework Content Pipeline so you can export seamlessly to the XNA Creators Club for both PC and Xbox 360 deployment.

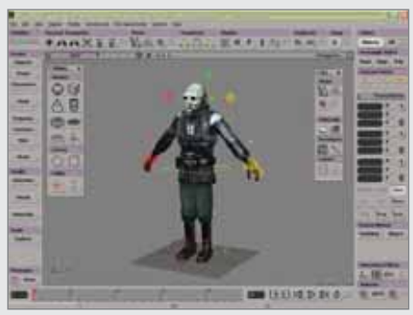
The XSI 6 Mod Tool comes with an enhanced user interface designed for first time users, and is supported by bespoke training videos from Noesis Interactive. These simultaneously load into the XSI Net viewport, while sample models are brought into interactive workspaces so you can see what's being taught. Topics include simple 3D modelling, object integration into a game, and how to use XNA.

Various plug-ins and tools for Valve's Source engine are also included in the mix, as are sample assets such as characters, vehicles, props and weapons from *Half-Life 2* that can be customised and exported for use in *Half-Life 2* or *Half-Life 2*-based mods. A layer-based fractal terrain generator, the Geographic Elevation Mixer, is bundled too.

As for those commercial restrictions, the main one is that Mod Tool files can't be opened using a full version of XSI 6, while the rendering features have been stripped out and mesh export is limited to models consisting of 64,000 triangles.

www.softimage.com/products/modtool

XSI 6 Mod Tool



Price: Free (400 MB download)
Company: Softimage
Contact: +1 514 845 1636

ProFX 2.6/MaPZone 2.6

Price: Available on request
Company: Allegorithmic
Contact: +33 4 73 40 79 84
www.allegorithmic.com

There's a big push when it comes to procedural art processes and French provider Allegorithmic seems to be picking up momentum with its advanced texture authoring middleware, ProFX. The latest point release sees the addition of a new optimised core which brings compatibility with Pixel Shader 2.0 to maximise the performance benefits of running ProFX under GPU acceleration. The version also links into the 2.6 release of Allegorithmic's free texture editing software MaPZone. This include a new bitmap image input node to enable you to mix bitmaps and procedural noises making it easier to add details texture.

Blender support

Price: Free
Company: 3Dconnexion
Contact: +44 1952 243629
www.3Dconnexion.com

The latest art package to join the likes of Maya, 3ds Max and SketchUp with support for 3Dconnexion's family of navigation devices such as the SpaceNavigator 3D mouse is the open-source suite Blender. The plug-in supports Windows (XP and Vista), Linux and Mac OS X versions of Blender. In a separate announcement, support for using the devices with the Mac version of Acrobat, so you can simultaneously pan and zoom 2D PDF documents, has also been added to the existing Windows support. The 3Dconnexion product line of 6 degree of freedom devices ranges from the highend SpacePilot (£271) to SpaceNavigator (from £39).

< CODING >

OPENGL'S BREAK WITH THE PAST

OpenGL 3.0 sees the cross-platform graphics API looking to the future…

Proving that anything DirectX has problems dealing with isn't only limited to Microsoft, cross platform graphics API OpenGL is also reaching the point of transition.

The OpenGL 3.0 specification, which was announced at Siggraph, marks a major revision. Backwards compatibility will be maintained through the current 2.x API, but this will be locked away from the future functionality to be developed in the new 3.x release. This marks a fundamental break in terms of how the technology will progress with a programmable shader-only approach.

Yet, thanks to its cross platform flexibility, the transition should be much easier to deal with, both for developers (and consumers), than the current DirectX 9-Windows XP, DirectX 10-Windows Vista bottleneck.

One of the main changes is to the object model, which switches from a state-based system to an object-based system.

This makes the API much more streamlined, as objects, once created, are immutable and only require a single function call to create a fully formed object. Similarly, object sharing across rendering contexts is now specified at the per-object level, enabling thread-safe function calls.

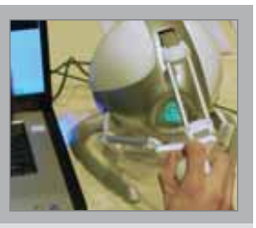
OpenGL 3.0

Price: Not applicable
Company: Khronos Group
Contact: Not applicable

And in keeping with this future-proofing, additional point releases within the OpenGL 3.x timeline are also already being planned. Respectively codenamed Longs Peak Reloaded and Mt Evans, these will add general usability features as well as support for hardware feature such as geometry shaders, texture arrays, and instanced rendering.

www.opengl.org

Falcon 3D Touch Device SDK



Price: Free
Company: Novint
Contact: +01 866 298 4420
http://home.novint.com

It's not going to win many design awards for aesthetics, but based on the company's experience in the medical, dental, architectural and industrial fields, Novint's $240 USB Falcon 3D Touch Device does bring something new to gaming in terms of 3D haptic devices. Grab hold of its grip and you're handling a three degrees of freedom, 1 kilohertz force-feedback, device. Usefully then, the company has released a free (if non-commercial) SDK to enable you to create supporting PC applications that enables users to feel weight, shape, texture, dimension, dynamics and force effects when playing enabled games.

xait-Engine v2

Price: Available on request
Company: xaitment
Contact: +49 681 9593 140
www.x-aitment.net

The world might need another artificial intelligence middleware company like the short list for London mayor needs another maverick, but German provider xaitment reckons it's got a winning policy with version two of its behaviourally-based xait-Engine. Using a goal-oriented finite state machine to define transitions between AI events, logic, probability and conditions, you can set up the behaviour system (which works in terms of team-based and autonomous configurations) using the FSM editor. The integrated NavMesh Generator also enables you to enter specifications about the environment which feed into the agents' world view.

< AUDIO >

OLDER, WWISER

The new release of Wwise takes it completely cross-platform, as well as offering more flexible licensing…

THE SECOND OF THE three promised releases this year sees a mixture of technical and business changes come to Audiokinetic's interactive audio pipeline solution, Wwise.

With an explosion in the development of smaller games designed for digital distribution, the licensing model has been made more flexible. You can now either choose a fixed, per-game fee, or pay royalties on a per-transaction basis for games released on Xbox Live Arcade, PlayStation Network and WiiWare. A similarly modified support programme is also available.

In terms of the technical additions, the headline sees support for Wii, including platform-specific elements such as Wii hardware effects, integrated within the Wwise Authoring application.

The Wwise Reverb system has been updated too, with increased flexibility and parameter control provided so you can achieve the optimal balance between audio quality, runtime CPU and memory use.

Other enhancements have been added to the 3D mixing system, with the Game Object Profiler now including a 3D Viewer so you can profile the real-time positioning and orientation of game objects and listeners.

Wwise 2007.2

Price: Available on request
Company: Audiokinetic
Contact: sales@audiokinetic.com, +01 514 499 9100

Finally, Wwise 2007.2 sees the introduction of the Dynamic Dialogue system. A lightweight and efficient schema of user-defined rules for building and managing dynamic dialogue audio, it enables you to use sample-accurate dialogue stitching to create a wide range of dialogue, including play-by-play commentary.

www.audiokinetic.com

Structure

Price: $499
Company: Digidesign
Contact: +44 1753 655 999
www.digidesign.com

The latest Real Time AudioSuite virtual instrument from Digidesign's Advanced Instrument Research group, Structure is a real-time professional sampler workstation for use with Pro Tools. You can drag-and-drop samples directly from Pro Tools while Structure's resizable in-built Sample Editor enables fast and easy waveform editing and sample mapping. It also boasts a 128-level multitimbral sound engine, integrated multi-effects processing engine, including convolution reverb, and supports an unlimited number of nestable patches and up to 8-channel interleaved samples. It comes bundled with 20GB of sound libraries including Quantum Leap Orchestral Elements.

Live 6 LE

Price: €129 (download)/€169 (boxed)
Company: Ableton
Contact: +49 30 288 763 0
www.ableton.com

Ableton has just released the cheaper, slightly cut-down LE version of its Live 6 music production and performance package. Limited to twelve simultaneous built-in audio effects, eight built-in instruments, two AU/VST effects and two AU/VST instruments per project, Live 6 LE still offers you the ability to use 64 audio tracks and unlimited MIDI tracks per project, with quality up to 32-bit/192 kHz. More than 20 audio effects, including delays, filters, distortion and EQs are in-built, and the package supports VST and AU effects. The boxed versions come bundled with SONiVOX and Puremagnetik samples and loops.

GRAPHICSCARDS

Well shuffled

The pace of technology may have reduced the number of companies offering workstation graphics cards, but it's only increased the competition, says Jon Jordan

The 3D graphics card market is a great example of how competition can create oligopolistic conditions.

Where there used to be half a dozen vendors, each succeeding year has seen companies falling by the wayside. Some, such as Imagination Technologies, 3Dlabs and S3, have shifted their attentions to the embedded graphics space.

Similarly, Matrox now focuses on commercial displays for enterprise, industrial, and government customers. Which just leaves Nvidia and ATI (AMD) offering cutting-edge workstation graphics cards.

The ironic thing is that with only two companies in the space, the competition has become even more fierce, as each furiously reacts to counter the other. That's one reason why each now offers a much larger range of products, from prosumer boards more akin to gaming cards (but with better input/output options), up to processing servers such as Nvidia's Quadro Plex visual computing system, which combine multiple highend graphics boards.

Also feeding into this is the wider push to programmability, which is blurring the line between graphics and general processing.

Still, as Sony found out when attempting to build PlayStation 3 just using Cell-processors, there are fundamental difference between CPUs and GPUs.

Whether there's any space for physics and AI processors remains less clear, though.

NVIDIA

TECHNOLOGY
Quadro FX 5600
HOST PLATFORMS
Windows Vista
PRICE
$2,999
CONTACT
+44 118 903 3000

The Quadro FX 5600 is designed for Vista

www.nvidia.co.uk

Taking the number one spot in Nvidia's workstation performance family comes the DX10, Shader Model 4.0-supporting Quadro FX 5600.

Boasting 1.5GB of GDDR3 frame buffer memory, 384-bit memory interface and graphics memory bandwidth of 76.8GB/sec, it can process 300 million triangles per second and has a fill rate of 19.2 billion texels per second. The result is it can output to two 3840 by 2400 resolution digital panels.

ATI

TECHNOLOGY
FireGL V8650
HOST PLATFORMS
Windows Vista
PRICE
$2,799
CONTACT
+01 905 882 2600

The V8650 has 2GB of RAM

www.ati.amd.com

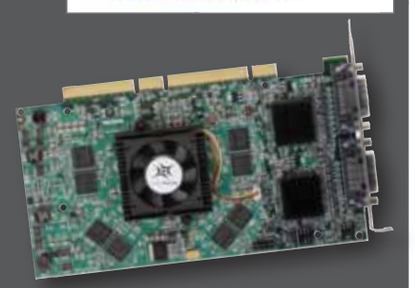
Claimed as the first workstation product to be backed with 2GB of GDDR4 memory, the FireGL V8650 is ATI's DX10, Shader Model 4.0 product.

Memory bandwidth is 128GB/sec, while the memory interface is 512-bit. It can process 700 million triangles per second and has a fill rate of 44.8 billion texels per second.

And with two DVI-I outputs, it can support two monitors up to resolutions of 3840 by 2400 pixels.

MATROX

TECHNOLOGY
Parhelia PCI 256MB
HOST PLATFORMS
Windows (2K, XP, Vista)
PRICE
$699
CONTACT
+44 1895 827301



The Parhelia offers many display options

www.matrox.com

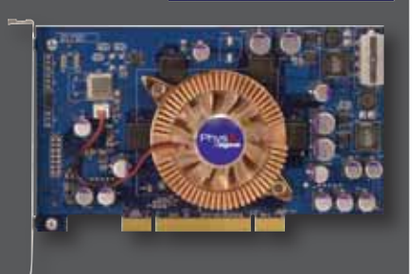
Games development isn't a priority for Matrox, which accounts for its top product being the ageing Parhelia PCI 256MB. Where Matrox graphics cards still impress, however, is the flexibility of their outputs, with two screen DualHead up to 2048 by 1536 resolution per display, and Dual-DVI up to 1920 by 1200 resolution per display supported.

Other options include the TripleHead Desktop mode, where you can stretch a 3840 by 1024 resolution image across three monitors.

pack

AGEIA

TECHNOLOGY
PhysX
HOST PLATFORMS
Windows XP/Vista
PRICE
$200
CONTACT
+01 650 210 3753



PhysX card is getting smaller

www.ageia.com

The jury still seems to be out on the long term commercial future of Ageia's PhysX's physics-based graphic card.

But with the company launching its first laptop-based card, the AGEIA PhysX 100M, the long term aim of eventually shrinking it down onto motherboards remains the comapny's goal.

And thanks to support within tech such as Unreal, Gamebryo and Vision, the SDK is being used extensively within development.

AISEEK

TECHNOLOGY
Intia
HOST PLATFORMS
Windows
PRICE
TBC
CONTACT
+972 3 612 0306

The ETA in Intia remains uncertain

www.aiseek.com

There's not been much news recently from Israel company AIseek, althought it's still making the rounds of game development shows to drum up support and, presumably, cash too. Its proposed Intia processor is designed to accelerate low-level artificial intelligence tasks such as perception and pathfinding movement and uses what the company calls a Graph Processing Core to handle search-intensive graphs which have a high degree of branching.

Visibility Culling

by Matt Rubin

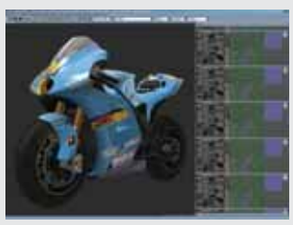
Senior Programmer, Black Rock Studio, Disney Interactive Studios

ADVANCED HIDDEN-SURFACE REMOVAL is an often overlooked task.

The default approach of view-frustum culling in software followed by z-buffering in hardware is easy to understand and straightforward to implement. But this approach does not scale well in practice, and performance tends to degrade as the number of draw calls in the view-frustum increase.

Thankfully there is room for improvement, and visibility algorithms have been developed to identify occluded objects at runtime for a given camera view. Since these occluded objects do not contribute to the final frame buffer they can be safely discarded without impacting the final rendered scene. As we evaluated different optimization strategies on *MotoGP*, we realized we could significantly improve our runtime performance using visibility culling.

Visibility algorithms are often based on camera sampling techniques with different levels of automation. In the early days at our studio, there was a visi-box system that required manual placement of visibility boxes into the environments. The designers would then specify which boxes were occluded from view when the camera entered each box. Although this could be a bit inaccurate and labor intensive, it got the job done.



The approach taken for *MotoGP* was more robust, and we were able to capitalize on the hardware occlusion query support in DX9 to develop a fully-automated image-space visibility culling algorithm. The system runs offline during our nightly build and generates visibility data for each track by procedurally animating the camera along the track spline at different positions and orientations and capturing visibility 'snapshots'.

For visibility sampling, the track spline is subdivided into 100 discrete sections. Each section has a visibility map (implemented as a simple bitmask) that records the visibility of every renderable object in the scene. We render the scene in two passes, laying down the z-buffer during first pass, and then issuing occlusion queries to the GPU during a second pass and recording the result of each draw call (in terms of number of visible pixels) to the visibility map.

At runtime, the system uses this 'a priori' information by mapping the in-game camera position onto the track spline to lookup to the visibility map for the current track section. Armed with the visibility map, we can perform a simple bit-test to cull scene objects that are fully occluded (and subsequently skip their draw call). The system disables visibility culling in cases where the camera strays too far from the track and falls back to basic view-frustum culling.

We were really impressed with the results of our visibility system. Track sections that previously had thousands of scene objects were significantly reduced (by 50 per cent or more), without any impact on the final rendered scene, or any rework of the original art assets. The system also helped us streamline our production pipeline as visibility data was automatically regenerated during the nightly build after an environment was modified and checked-in.

Setting up an effective hidden surface removal strategy can be a challenge, but by designing the system to be both accurate and efficient, the potential benefits (for performance and production) can easily justify the effort.

David Jefferies is away.

KEYRELEASE

PRODUCT: Emergent Elements
COMPANY: Emergent Game Technologies
PRICE: Available on request
CONTACT: +01 818 222 5355, sales@emergent.net
W: www.emergent.net

Emergent emerges

The final pieces of Emergent's online game technology puzzle are soon to be announced, but that's not all...

Perhaps unsurprisingly for a company that's just raised $12 million in new funding, there's plenty of activity going on behind the scenes at US middleware provider Emergent.

The result of a merger between longtime rendering specialist NDL and ambitious online services company Emergent two years ago, the combined entity is now almost at the stage of unveiling the suite of online game development and deployment tools it hopes will shake up the MMOG market.

"We'll start talking about our online platform at the Austin Game Developers Conference," confirms John Goodale, himself a recent change, coming onboard as vice president of marketing and business development in early 2007, after spending six months of external consulting concerning Emergent's expansion into China, Korea and Japan.

"Essentially, we're partnering with best-of-breed solution providers to offer services such as billing, customer relations, provisioning, and boxes and bandwidth to enable developers to launch online games," Goodale says.

"It's something we're interested in selfishly as a company because it's a scalable business, but because we also believe we can change the online landscape. We'll not only make it easier to release an online game by providing the tools, services and solutions, but we'll enable developers and publishers to focus on what they do best – creating innovative games."

In turn, these partnerships with third party companies will be backed up by new proprietary tools such as an online game server engine that will slot into Emergent's existing line-up alongside products such as its Metrics, Automation and Gamebryo technologies.

A number of early licensing deals have already been announced with Austin-based MMOG developer Online Alchemy signing up to use Gamebryo and the Metrics, server management and Automation tools, while Chinese outfit Winking Entertainment is standardising its future development around Emergent's technologies. US companies TimeGate and Trion World Network have also signed up to use the tech for their forthcoming online games.

But with full details of the online products being held back for the time being, Goodale is instead keen to talk about the future of Gamebryo, both in terms of its value to Emergent as well as the wider development community.

"Our Gamebryo business is successful and solid. If that was all we were doing, we could be profitable," he reveals.

"We've shown it to Sony and several large publishers and everyone's been very impressed," Goodale says. "It's currently pre-Alpha but we're working hard to get it baked for a Q1 2008 release."

This would see Floodgate released alongside Gamebryo v2.4, which will include new tools including a fully featured terrain editor.

As for the issue of whether Floodgate could be released as a standalone blackbox for integration into other engines, Goodale says the question remains up for debate.

"Right now it's closely tied to Gamebryo but it could be separated out," he muses.

> ***"We'll not only make it easy to release online games, but enable developers to focus on innovation..."***
>
> ***John Goodale, Emergent***

Indeed, the market for engines that can offer full cross-platform abilities, especially including PlayStation 3, remains strong. It's an area Emergent is looking to push further with its Floodgate technology.

A data streaming API that can optimise the performance of applications running on any multicore architecture, it's being heavily focused to make the most use of PlayStation 3's SPUs.

And with the majority of that $12 million investment earmarked for further research and development work, the location for which has been centralised in the company's Chapel Hill North Carolina office, it will be interesting to see what other products Emergent comes up with as it looks to further expand its technology offerings over the coming months.

Top: Gamebryo 2.3, the current version, includes a scene designer

Middle: Roughly displayed, Floodgate optimises data processing across SPUs

Bottom: John Goodale, VP, marketing and business development, Emergent

An office in every continent?

Since its 2005 merger, Emergent quickly branched out of its North American homeland, opening a UK office to encourage European sales. In turn, this activity has been strengthened with the opening of an Eastern European and Russia sales office in Wroclaw, Poland this summer.

"Our emerging markets are Eastern Europe, China and we're doing a hell of a lot of business in the Serious Games space too," VP John Goodale says.

But despite the company's explosive sales growth in China – Goodale claims revenues have risen more than threefold in the past 18 months – Emergent still doesn't have a permanent presence in the country.

"Our Chinese sales are headed by David Brame who's based in North Carolina, while our Chinese field application engineer is based out of our Californian HQ," Goodale says. "Having been involved in setting up companies in Asia, we're dealing with the usual issue of risk versus reward in terms of whether you try to start your own office or look for local partners."

The dilemma should be concluded before the end of the year. Before then, however, Emergent expects to announce a joint venture to handle sales in Japan, which is the approach it's already employed with considerable success in Korea.

And that will leave Africa, Australasia and Antarctica.

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Kelly Murrell, HR Consultant
Microsoft Game Studios

Amiqus' service allows me to concentrate on my role as Games Design Manager and spend less time on the recruitment process. Finding the best talent in the market is a specialist activity and I am pleased that Amiqus provide this service to us.
Matthew White, Games Design Manager
Codemasters

I've worked with Amiqus on numerous occasions and have always found them to have expert knowledge on their subjects and able to provide excellent candidates that have been thoroughly screened before presentation. The service Amiqus offer should act as a reference point for the rest of the videogames recruitment industry.
John Hastie, Senior Producer
Midway

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MORE E3 SUCCESS GREETS UNREAL LICENSEES

Mark Rein looks back at the past month of Unreal activity…

THE RESULTS FOR THE E3 Critics Choice Awards are in and two Unreal Engine-powered games combined to win three of these most prestigious awards.

Congratulations to 2K Games Boston (formerly Irrational Games) on winning Best Action/Adventure Game for *Bioshock*. A demo of *Bioshock* is now available Xbox Live Marketplace and the title should be in stores by the time you read this. In addition *Bioshock* is winning incredible reviews. Game Informer and IGN.com both gave *Bioshock* 10/10 scores and *PC Gamer UK* awarded Bioshock a stunning 95 per cent.

Congratulations also to Bioware who won Best Role Playing Game and Best Console Game for *Mass Effect*. This is the second year in a row *Mass Effect* has won for Best Role Playing Game and we're anxiously looking forward to its release soon.

Chair Entertainment also deserves our heartly congratulations for walking away with IGN's Best Xbox Live Arcade Game for *Undertow*. According to IGN: "It's original, perfect for short or long gaming sessions, and is built around the multiplayer online experience. Plus it looks gorgeous for a game that is only 50MB in size, likely thanks to the fact that the game is running on the Unreal Engine 3."

TRAGNARION AND STAR VAULT ARE NEW UE3 LICENSEES

MALLOCA, SPAIN-BASED TRAGNARION Studios has licensed Unreal Engine 3 for their upcoming game known as *The Scourge Project*.

According to the official announcement, "Carl Jones, head of Tragnarion Studios, made the decision to use Unreal Engine 3 after finding that the technology lived up to the high ambitions of the Tragnarion team" and that "Every single feature we want is easily implemented in Unreal - for all the major high-end platforms."

Swedish game developer Star Vault has chosen to license Unreal Engine 3 for the creation of their upcoming MMO game and according to their CEO they are taking MMORPGs "to the next level both in player features and in visual contents by using the most powerful game engine, Unreal Engine 3."

GAMESPY JOINS IPP

IGN ENTERTAINMENT'S GAMESPY has joined Epic's Integrated Partners Program and will incorporate their suite of industry leading online technologies into Epic's Unreal Engine 3. GameSpy's technology will be immediately available to any publishers or developers that license Unreal Engine 3.

By incorporating GameSpy's online technology into Unreal Engine 3, the two companies have created an integrated one-stop solution for game developers looking to leverage the world's most advanced multi-player technology and game engine in one package. The partnership will span both the PC and PlayStation 3 platforms within Unreal Engine 3, enabling seamless PlayStation 3 and PC online functionality. Functionality available to Unreal Engine 3 licensees via GameSpy will include cross-platform gameplay, communication tools and competition applications.

"Epic and the Unreal Engine 3 are on the leading edge of next-generation and multi-platform gaming, and we are very pleased to join the Integrated Partners Program. GameSpy is committed to working together with Epic to address a broad range of needs for the connected gamer, including multiplayer matchmaking, in-game and out-of-game messaging, persistent player communities, and competition systems," said Jamie Berger, senior vice president of consumer products and technology for IGN Entertainment.

"Over the past months we have fully integrated a broad suite of GameSpy online technology in Unreal Engine 3 and have built a fantastic working relationship with Epic. We look forward to extending that relationship with a number of new technologies customized for Unreal Engine 3 to be introduced over the next 12 months."

By making available many leading community tools and technologies, GameSpy will provide game developers with the opportunity to have PlayStation 3 and PC users play, communicate and compete together as a single community.

UPCOMING EPIC ATTENDED EVENTS:

TOKYO GAME SHOW
Makuhari Messe, Japan
September 20th to 22nd, 2007

LYON GDC GAME CONNECTION
Le Palais des Congrès de Lyon
December 4th to 6th, 2007

GDC 2008
San Francisco, CA
February 18th to 22nd, 2008

Please email: mrein@epicgames.com for appointments.

To discuss anything raised in this column or general licensing opportunities for Epic Games' Unreal Engine, contact: **mrein@epicgames.com**

FOR RECRUITMENT OPPORTUNITIES PLEASE VISIT:
www.epicgames.com/epic_jobs.html

*Canadian-born **Mark Rein** is Vice President and Co-Founder of Epic Games based in Cary, North Carolina. Epic's Unreal Engine 3 has won Game Developer Magazine's Frontline Award for Best Game Engine for the past three years and Epic was recently awarded Best Studio at the Spike TV Video Game Awards. Epic recently shipped Gears of War, which broke Xbox 360 sales records. The studio is currently working on Unreal Tournament 3 for publisher Midway.*

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Programmers Jobs

Experienced Programmers
£DOE + Benefits

Oxford PA1191F1

Our Client is a successful Middleware Developer working on 3 products that are taking the industry by storm. They require experienced programmers with an excellent academic background and a real enthusiasm for a speciality area, be it tools or animation. Candidates with experience in next gen development are at an advantage.

Lead Programmer – Next-Gen
£DOE

Surrey PA300F2

Working with one of the UK's premier developers, this is a chance to work on a genuine AAA next gen title. They require a highly competent and experienced team leader with excellent knowledge in the areas of gameplay, graphics and AI being preferred. You must be a highly competent programmer with exceptional communication skills and a real desire to be part of something special.

Gameplay Programmers
£Excellent + Bonus

North West PA258F7

Our client is the UK's Premier Independent Games Developer. They have a stack of awards and an unrivalled sales track record after a number of genuine world-class titles. With at least one published title to your name, you will have a genuine feeling for what makes a 'fun' game. This is a fantastic chance to join a team working on a highly anticipated project.

PS3 Programmers
DOE

Midlands PA3419F3

Leading developer recruiting for major PS3 project. Candidates should have at least 2 years Industry experience, with at least 1 published title and be proficient in C/C++. Ideally you will have experience with OpenGL, D3D or PS2 VU1 programming. Hands-on experience authoring and optimising vertex and pixel shaders using HLSL/CG would be beneficial.

Creative Jobs

Senior Artists
£Excellent DOE

London CW3470SA1

My client is looking for exceptionally talented senior artists who are ready for the challenge of producing a AAA title on the next generation platforms. Candidates will have a strong portfolio with examples of high-resolution modelling in Max and/or Z-brush, normal mapped game assets, environments and characters. Previous experience as a senior artist is preferred.

Designers
£neg DOE

Midlands CW3419LD

As a member of the Design Team at this critically acclaimed studio you'll be working with like-minded, creative individuals whose passion is playing, analysing, and creating exceptional videogame entertainment. Candidates will ideally have 2+ published titles, experience with rapid visualisation, prototyping and development tools, and first person shooter editor experience, ideally in UnrealED.

Senior Environment Artist
£DOE + Benefits

Midlands CW3419SEA

My client is an award winning studio who have now moved exclusively onto next gen console development. The role requires someone will understand how to convey history, styling, texture and mood by skilfully blending assets. The ideal candidate will have 5 years industry experience, and have worked on an Xbox360 or PS3 title.

External Producer
£45k-£55k DOE + Benefits + Bonuses

London CW82EP

Our client is one of the world's most renowned games developer/publishers of computer video games. They are currently seeking a External Producer to be based at their London Studio. You should have exceptional project management, and organisational skills, experience in working with external development teams over short and long production periods, and superior knowledge of production methodologies and their application. Full spec available on request.

Overseas Jobs

Design Director
CA$Excellent

Vancouver CW2026DD

As the largest independent game developer in North America, my client specializes in developing original and licensed IP for all gaming platforms. They are currently looking for a highly experience Design Director to supervise the design department of this cutting-edge studio and help to establish and maintain the design direction on a number of high-profile projects. Full spec available on request.

Art Director
CA$Excellent

Vancouver CW2026AD

As the largest independent game developer in North America, my client specializes in developing original and licensed IP for all gaming platforms. They are looking to recruit an experienced Art Director to manage the overall artistic look and style of a project as well as managing a team of artists. Full and detailed spec available on request.

Senior Software Engineer
$Competitive + relocation

Canada PA2026F1

Our Vancouver based client are seeking a Senior software engineer to join their team working on original IP's for next gen consoles. The ideal candidate will have at least 5 years experience and 4 shipped titles, preferably DS or PSP. Great opportunity for a change of lifestyle.

Lead Programmer
$Excellent + relocation

Australia PA319F8

Our client, the developers of an award winning revolutionary RPG strategy game, are seeking a Lead programmer to head up the team in their Canberra Studio. The ideal candidate will have senior coding experience and at least 2 shipped titles.

Programmers
Email pete@aswift.com

Creatives
Email colin@aswift.com

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Aardvark Swift

HEARDABOUT

Harry Potter and the Order of the Phoenix

John Broomhall talks to Electronic Arts UK's Adele Cutting about the audio production for Harry Potter and the Order of the Pheonix…

FORMATS: PS2, Wii, PS3, Xbox, 360, Nintendo DS, PSP
DEVELOPER: Electronic Arts
PUBLISHER: Electronic Arts
AUDIO TEAM:
Adele Cutting (audio director), Campbell Askew (second audio director, covering maternity leave), James Hannigan (composer), James Slavin (audio lead), David Bond and Dave Newby (sound design), Andy Walsh (script writer), Sam Turner (speech co-ordinator), Barney Pratt (in-house speech editor) Gregor O'Hare (assistant in-house speech editor), Jeremy Taylor (external speech editor), Dom Smart (music editor/integrator); Andy Morris, Chris Adams, Tim Green, Adam Cherbetji (audio programmers), Allan Wilson (orchestrator/conductor),
Music Recording: Air Studios (London Philharmonic/Pinewood Singers), Bratislava (Bratislava Concert Orchestra); Geoff Foster (engineer, London), Peter Fuchs (engineer, Bratislava), Donal Phillips (audio tester)

THE NUMBERS:
Approximately 70 minutes of original music; 1,750 sound effects; 7,200 lines of dialogue spoken by 103 actors, 25 from the original movie, playing 156 characters

When Adele Cutting took the role of audio director for the latest *Harry Potter* game in which players can fully explore Hogwarts and 'play the film of the book', her immediate focus was dialogue, she explains: "Speech quality was a priority and so we really took control – including the script. A great script is the foundation of great final speech assets and therefore we agreed to have a specialist writer working within the audio team – a first for the series. I wanted the whole team to be really aware of the dialogue being recorded for the game and the potential for wastage and additional pick-ups through script changes. Naturally, these are inevitable but controlling that change is vital."

Cutting's approach was to conduct script read-throughs not only with the direction and audio team, but with the designers and programmers – and even key cut scene animators. She reflects: "Initially, there was some reticence and of course, shyness from team members who'd rather die than read a part out loud. However, it was such a valuable (and enjoyable) experience that eventually people were fighting over the parts! An ongoing, centrally co-ordinated process resulted in everyone being intimately familiar with the dialogue – ultimately leading to enhanced quality. Walking around Hogwarts as Harry, you overhear other peoples' conversations. Pupils acknowledge you and even have a (convincing) chat."

Another first for the erstwhile *Harry Potter* audio team was the use of 'walla'. As well as general crowd material embedded in the game ambiences, Cutting's team recorded specific walla groups – for instance three to four people, so that moving close to a group of conversing bystanders yields a natural sonic reality. Cutting: "After experimental work with the audio team, Campbell and Barney recorded groups of kids using a gibberish script, each child randomly using one of 20 lines of nonsense. It's vital, especially working with kids, to actually have something for them to say even though it's not proper words. Then you direct their expression – cheerful or anxious or conspiratorial whispering."

A variety of walla moods enabled an implementation following the game's emotional contour – Hogwarts is being taken over by a strict and oppressive regime which eventually gives way to a positive atmosphere.

Another of Cutting's priorities was the application of music, working closely with leading composer, James Hannigan, especially chosen to write original score. Cutting: "We consciously avoided doubling up music and sound conveying the same message and definitely steered away from any sense of musical wallpaper. For me, this adds to the realism of the overall soundscape. I'm delighted that, for the first time, we had rights to use Hedwig's theme. It's amazing how that music says 'Harry Potter' and as well as the plethora of wonderful original themes and cues he wrote, James did a great job of re-arranging Williams' music to be deployed interactively to the greatest effect – again, following the contour of the game's narrative."

According to Cutting, this stamp of authenticity was heavily underpinned by the use of 'off-screen sound FX and audio vignettes'. "Graphically, the world of Hogwarts looks identical to the movie – the art guys even photographed the film sets. But when it comes to making it feel alive, sound adds so much. A prime example is when you're in the great hall hearing the unseen world of the children in neighbouring corridors – for instance, letting off fireworks and laughing – it gives Hogwarts its personality."

With recent chart ratings testament to the game's continuing success, the audio team have once again raised the bar.

John Broomhall is an independent audio director, consultant and content provider
develop@johnbroomhall.co.uk
www.johnbroomhall.co.uk

Life in the engine room

More and more studios are looking towards licensing existing technology to help them produce their game. But, asks Ed Fear, how do you choose which engine, and is it really the panacea it may seem?

As technology progresses and expectations similarly increase, the barrier to creating impressive titles becomes ever more daunting. If you're a developer without much of a technological framework to speak of, licensing a third-party engine can appear the best way to develop your game in time and on budget.

It's a decision that comes with its own perks and pitfalls. Usually the perceived greatest benefit that a pre-built engine brings is that of cost: it's cheaper to buy a solution that has already been written than to spend the time doing so yourself. If you've been given a certain amount of money to make a game, how happy will your publisher be to learn that you're using their time and money on the development of your in-house technology? No matter which way you look at it, time and resources are being diverted from other areas that may need it more.

ENGINE TROUBLES

And it's a timely issue to discuss, given the on-going lawsuit between Silicon Knights and Epic, where the former is suing the latter over perceived lack of support for Unreal Engine 3 that resulted in SK building a bespoke engine for its new game *Too Human*.

John O'Neill, business director at Vicious, the developers of the Vicious Engine, boils down the decision to two choices: you either invest in your technology or you invest in your game – and it's clear which he thinks is more important. "Given current game development requirements, if a company is founded on the business goals of making games – any type of games – then they should be focusing on building the game content itself."

For Epic VP Mark Rein, though, it's important that developers realise the benefits of having pre-built tools. While your art teams may have Max and Maya to work with, if they're doing so while your toolchain is still in a state of flux, the pipeline for getting that content into the engine is either a blocking point – or could, with just a simple change of functionality, force changes that require assets to be re-worked and re-exported.

Unreal Engine 3 is rapidly gathering momentum

"If you licence an engine, you have the ability to get up and running early in the project..."
Mark Rein, Epic

"However, if you licence an engine," he says, "you have the ability to get up and running early in the project. You'll probably still need to spend some time modifying the engine to suit the specifics of your game, but you should at least be able to start to build content and test your ideas."

Gameplay programmers can be working on scripts and level designers can be working in the mapping tools from day one. And it's this saving of time that can make all the difference, says Rein: "Being able to start earlier leaves more time for polishing and fine-tuning – the stuff that distinguishes a good game from a great one."

DECISION TREE

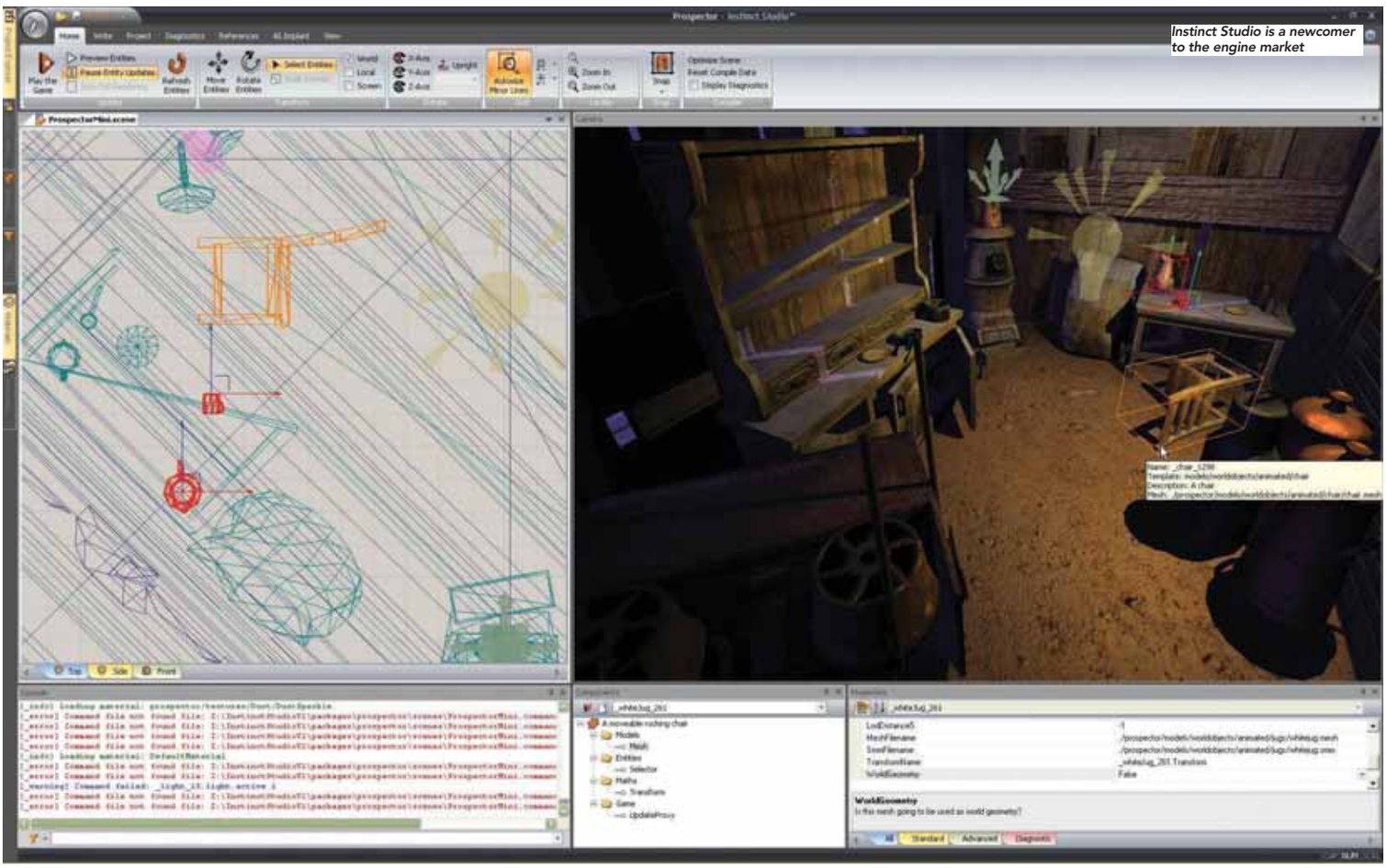
Of course, even if you decide to look to external technology, there's still the choice of which engine to use. How do you cut through the marketing and ensure that you pick the engine that best fits your company?

"My main piece of advice would be to undertake thorough evaluations of several competing technologies to work out which would be best suited for the project in hand," says Mike Gamble, business development director at Instinct, creators of the Instinct Studio engine.

"Don't just try out the technology itself – include a wider trawl of the internet forums and ask other users to try and get a clear picture of the engine's real capabilities."

Using the free trial to accurately determine actual performance is something Rebellion CTO Chris Kingsley is adamant studios should do.

"Make sure you do your homework. Don't just believe what people tell you about their middleware – demand to see it running on the platforms you need it to run on, and get hands on with the code."



Instinct Studio is a newcomer to the engine market

While it's important to keep in mind the requirements of your game while evaluating engines, it's also important to evaluate the company behind it.

"Choosing your middleware provider is more like choosing a development partner – one that is responsible for a sizeable portion of your code," says Gavin Longhurst, director of business management at MMO engine company Bigworld. "Studios should also look closely at training, documentation and developer support."

Support, of course, is a large issue: if you're banking a big part (or even all of) your company on someone else's technology, you need to be sure that there's someone on the other end to fix any problems that might crop up.

"If people have a question about a specific engine feature, they don't want to wait a day or two for the answer - they want to call or email their middleware partner and receive an answer almost immediately," explains Trinigy's Richard Radmacher. "Responsive feedback and immediate bug fixes are crucial for a smooth development process without delays."

Many of the technology companies we spoke to were in agreement on one particular point: it's extremely important that you know exactly what you want from an engine before you go looking. And as Emergent CEO Geoffrey Selzer tells us, it's important to not only be thinking of what you want from the engine now but your future plans for your company.

"I think it really depends on whether you're building a company or a single game. If you're looking to make a game that's similar to something already out there – if you want to make a jungle-based FPS and you want to ship it in 12 months – well, maybe licensing an engine like CryEngine 2 would be the best idea.

"However, if you're building a company, you need a solid technology base, a flexible framework that you can evolve upon. In that case, you need to look at an engine that's architected to be more general-purpose."

Monumental's engine eases MMO development

"If you're looking to make a game that's similar to something already out there, then maybe licensing that engine is the best idea..."

Geoffrey Selzer, Emergent

MIDDLEWARY

For those developers that largely use their own in-house engines, however, this last point – the future – is something that they feel studios should be aware of. While middleware may seem the cheaper option at the moment of your decision, it's important to think how that choice might affect your studio's future.

If you build your own engine, you can keep building on that technology base as your studio progresses from project to project. However, if that technology base is interlinked with someone else's engine, reusing that base will is likely to involve re-licensing – which can make that initial 'cheaper' decision of licensing middleware cost more money in the long run.

This cost is something Codemasters saw as it began developing its new in-house engine, Neon, which it recently debuted in *DiRT*. "By using the technology across more products we begin to see bigger and bigger cost savings, as opposed to having to licence middleware technology for more and more titles," says Gavin Cheshire, VP of Codemasters Studios. "You actually do save development time and hence costs by maintaining strong support for your own tech."

Also important to factor into the cost equation is how much of the middleware is relevant to your game.

"Be realistic about how long it would take you to write what you need," explains Andrew Oliver, chief technical officer at Blitz, which has been using its in-house developed BlitzWare platform for over seven years.

> ***"Things have changed a lot – it would be massively difficult and expensive to create a competent engine from scratch now..."***
>
> ***Andrew Oliver, Blitz***

"If you want a physics engine, then it's not a case of saying how long it would take to write Havok – it's how long it would take to write what your game requires."

The other problem with using an externally built engine is one of control: the code you get is written and maintained by someone else.

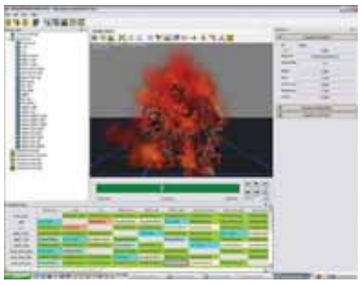
"We've used middleware before, but for us it was a sudden loss of control we couldn't stand. We'd always been in a position to fix our bugs, but now there were fixes that we had to wait for other people to do," says Oliver.

It's a concern Rebellion's CTO Chris Kingsley shares: "If we promise a publisher to deliver a game on time and to a high standard, it's essential we can meet our promises. I've heard plenty of horror stories of bugs in some middleware tripping up milestone delivery and even submissions."

MIDDLEGROUND

Having an in-house technology platform is certainly a noble goal, but it's also one that many are aware is unfeasible in certain situations.

"The benefit is huge, but so is the investment. If you're a new start-up studio, it's a really tricky decision," says Frontier's David Braben.



Animation systems can be in-engine or modular

Oliver agrees: "Things have changed a lot over the years. It would be massively difficult and expensive to create a competent engine from scratch now. If we were just starting out in business, I'd find myself forced to buy an engine."

It's important to realise, though, that while you need to consider the future implications of your decision, it doesn't necessarily mean you're doomed to keep following the path you've chosen.

When Valve had just started up and was deciding whether or not to develop its own technology, it evaluated its internal capabilities and realised that no-one on the team had experience on building an engine.

"When we did that analysis," marketing director Doug Lombardi says, "it was fairly obvious that licensing the *Quake* technology was the best choice – we could make *Half-Life* by adding some animation and AI code and release our first product in a reasonable amount of time."

When it came to *Half-Life 2*, however, Valve found itself in a more fortunate position and was able to build its own engine, Source, which it now licences out to other developers.

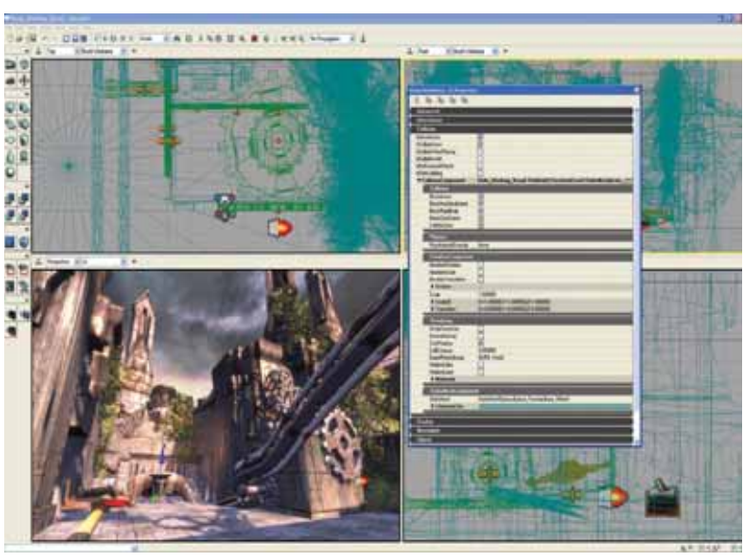
There is a comfortable halfway house though: so-called modular middleware, which allows you to develop the parts you feel capable of doing and licensing the others.

"Modular middleware gives developers more options," explains Vicious' O'Neill. "They can now license a full package and use everything that is included by default, they can buy a pre-built engine and enhance it with modular solutions from other vendors, or they can build the core engine themselves and include modular pieces as needed. It's a great situation for developers."

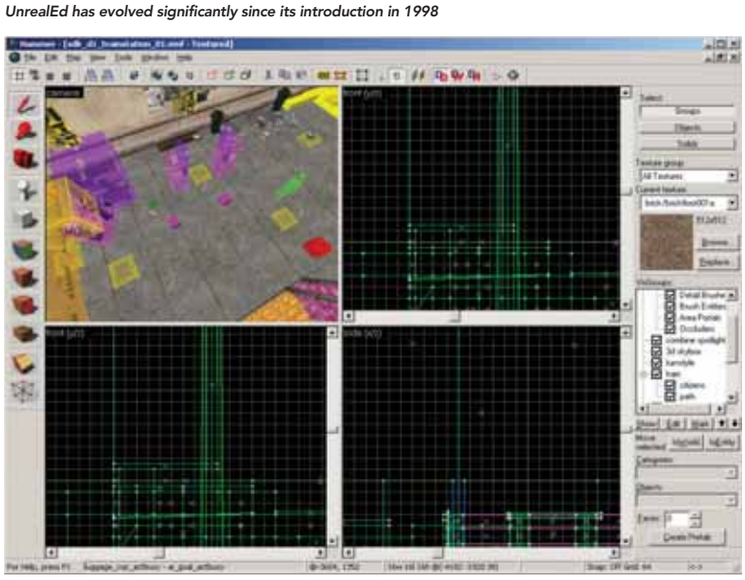
The answer to the dilemma may lie in modular middleware, but one thing is clear: the decision is not one to be taken lightly. "Not all middleware is created equal: some is great and some is fatally flawed," concludes Kingsley. "The history of middleware is littered with promises – so beware of the hot air, and do your due diligence before you make your final decision."

For more on this issue, plus extended Q&As with the industry figures quoted in this article, head to ***www.developmag.com***

Emergent's Gamebryo features in high-profile titles such as Civilization 4 and The Elder Scrolls IV: Oblivion



UnrealEd has evolved significantly since its introduction in 1998



Hammer, the Source engine level editor, was a tool designed for Quake before it was acquired by Valve

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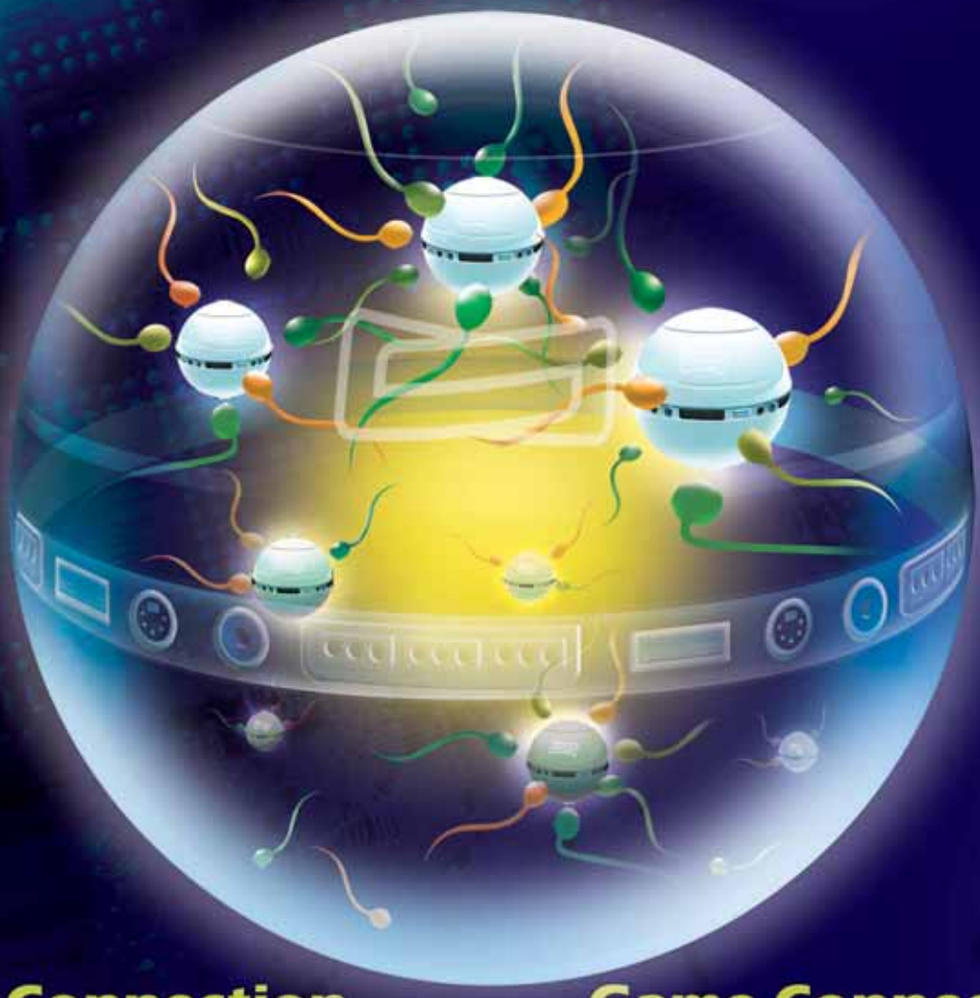

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The door is OpenKODE

Mobile developers now have a way to sidestep tricky platform fragmentation, says Ideaworks3D's Tim Closs…

In the July issue (*Develop* 74) Jon Wee's article 'The technological evolution of mobile games' gave a good summary of the 'platform fragmentation' challenges which currently plague native mobile game developers.

In this response, I would like to expand on Jon's points, and also highlight that the industry has finally agreed a solution to this problem by way of the OpenKODE initiative.

Platform fragmentation for native mobile game developers amounts to the following; how do I create a single C/C++ codebase which can target all of the native deployment opportunities (Symbian 7/8/9/Series60/UIQ3, Brew, Windows Mobile 5/6, Mobile Linux, WIPI)? Some of these operating systems do not even have full support for the C standard libraries.

For example, even a simple operation like checking for a keypress differs considerably between operating systems. The code in each case might look something like that shown in **Figure 1** (*far right*). The brute-force approach to such differences is to write the game to a single OS and then port the entire codebase, ideally using low-cost outsourced labour. This is highly inefficient, and does not solve one of the main challenges, which is to provide simultaneous release across all platforms (eg. to best leverage any marketing spend).

A better solution is technology based; devise a source-level abstraction layer which the developer writes to, which is implemented (either by the developer, or a 3rd party) for each native OS. The operating system services which need to be abstracted include input (eg. keyboard, stylus), file access, memory management, querying of device properties (eg. screen size) and others.

Devising a source-level abstraction layer which can be

"The industry has finally agreed to a fragmentation solution by way of the OpenKODE initiative…"

implemented reliably and consistently across all native operating systems is a considerable challenge. Operating systems vary considerably in their approaches to event handling, threading, usage of static data, and more. However, as Jon suggests, if successful this approach would be of enormous benefit to the industry, enabling publishers and developers to maximise deployment to native environments.

Thankfully, after much hard work, the industry has agreed such a solution in the form of the OpenKODE initiative (www.khronos.org/openkode). OpenKODE is a standard which has been put together by the Khronos group, and thus has industry-wide support. To quote the Khronos website: "The OpenKODE Core API abstracts operating system resources to minimize source changes when porting games and applications between native operating systems."

The final specification is almost complete, and is almost certain to be ratified before the end of 2007, as at least two companies already claim to have conformant solutions across all the major native operating systems.

In the world of OpenKODE, the keypress example above reduces to the that shown in **Figure 2**.

It is highly likely that network operators will begin to mandate OpenKODE as embedded software, to enable the uptake of rich media applications, thus driving data revenues. Softbank Mobile (the third largest operator in Japan) has recently announced a partnership to bring an OpenKODE platform to their service (www.khronos.org/news/press/releases/rel41.html).

Ideaworks3D has over five years' experience in OS abstraction, and as such we were chosen to be the editor of the OpenKODE OS abstraction APIs. In our Airplay solution we have the first commercially-available OpenKODE solution. Uniquely, Airplay goes beyond the source-level compatibility of OpenKODE to providing full binary compatibility across all native operating systems. This means the same game binary (which is pure ARM code, not a virtual machine instruction set) can be linked and executed on Symbian 7/8/9/Series60/UIQ3, Brew, Windows Mobile 5/6 and Linux Mobile. An x86 version of the binary will also run on the desktop or as an Active-X plug-in. Airplay also provides a full desktop ARM binary simulator, courtesy of ARM's RTSM tool.

Publishers including EA, Glu and Square Enix have already used Airplay to bring native games to market, delivering a single game binary across multiple operating systems. Publishers recognise the enormous cost savings in terms of porting, QA and certification which the unique binary solution brings.

In summary – native operating systems offer enormous opportunities for rich media applications, including games. Until now, fragmentation in the underlying operating systems has limited the ability of developers to target all of these platforms.

TheOpenKODE initiative, together with implementations including Airplay, have finally brought a commercially-viable solution to the table. Now at last there is a cost-effective route to market for rich, console-quality native games across a widerange of mobile devices.

www.ideaworks3d.com

```
// Symbian (assume main game class derived from required base class)
TKeyResponse CMyAppCnt::OfferKeyEventL(const TKeyEvent& aKeyEvent, TEventCode aType)
{
	if (aType == EEventKey && aKeyEvent.iCode == SYMBIAN_KEY_CODE)
	{
		// Do whatever
	}
}

// Brew (assume main game class derived from required base class)
void GameMainCanvas::keyPress(uint16 key)
{
	if (key == BREW_KEY_CODE)
	{
		// Do whatever
	}
}

// Windows Mobile - standard window message handler
LRESULT CALLBACK s3eWndProc(HWND hwnd, UINT uMsg, WPARAM wParam, LPARAM lParam)
{
	if (uMsg == case WM_KEYDOWN && wParam == WINMOBILE_KEY_CODE)
	{
		// Do whatever
	}
}
```

Figure 1

```
#include "KD/kd.h"
int kdMain(KDint argc, const KDchar* argv[])
{
	while(1)
	{
		// Update events, including keyboard.
		kdPumpEvents();

		// Poll the state of 'Game key A' and put the result in
		// res. Game key A should be mapped onto whatever is the
		// device's normal fire button, so the game developer doesn't
		// have to worry about what that is.
		int res = 0;
		kdInputPollb(KD_IO_GAMEKEYS_A, 1, &res);

		// Now see if our key is pressed.
		if (res)
		{
			// Do whatever.
			kdAssert(("It's been pressed", 0));
		}
	}
}
```

Figure 2

LOOKING FOR THE PERFECT PLATFORM?

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Studio News

Games development's movers and shakers.
This month: Introversion, RealTime UK and Popcorn

Introversion

Indie darling Introversion has this month taken onboard another full-time developer, significantly increasing the size and production power of the company's development team.

Leander Hambley joins Introversion after having studied Computer Science at the University of Southampton. As well as being a long standing member of the Introversion community, he's also participated in the beta-testing of all of Introversion's games. He was initially employed to develop a prototype of *Defcon* for a mobile platform and will also be helping the team with the release of their fourth title, codenamed *Multiwinia*.

www.introversion.co.uk

RealTime UK

The art team welcomes two new recruits into its fold this month, with Ben Robins (*left*) and Peter Kolus (*right*) both joining as digital artists.

Ben previously worked as part of the NVisage CGi team at Burrows WCJ, and previous to that worked for IF3D, on a *Star Wars* project for LucasArts. Peter has relocated from Poland to start work at RealTime, and previously worked at Evermotion, one of the most renowned 3D visualization companies, where he specialised in creating life-like environments.

www.realtimeuk.com

Popcorn Arcade

Publisher Data Design Interactive has opened a new studio for their Wii software label Popcorn Arcade, and supplemented its development team with another five staff, in what they say is their bid to 'become the biggest developer for the Wii'.

Lee Parke (*far left*), Samuel Hanke (*second from left*) and Gerard Mulcahy (*centre*) join the company as junior programmers while Marc Geahchan (*second from right*) and David Wolsey (*far right*) enter the art department.

The new studio will be headed up by Robert Dorney, who has been with the company for nine years.

www.datadesign.uk.com

Viacom

Viacom has hired former Take 2 Germany MD Arwed-Ralf Grenzbach for the role of VP for videogames, music and special products at its Nickelodeon and Viacom Consumer Products division. Based in London, Grenzbach will oversee the development of NVCP's international videogame, music and special products strategy spanning brands including MTV and Nickelodeon.

Prior to Take 2, Grenzbach worked at Disney and Sony Music and at Viacom will report into Jean-Philippe Randisi, VP and MD of NVCP EMEA.

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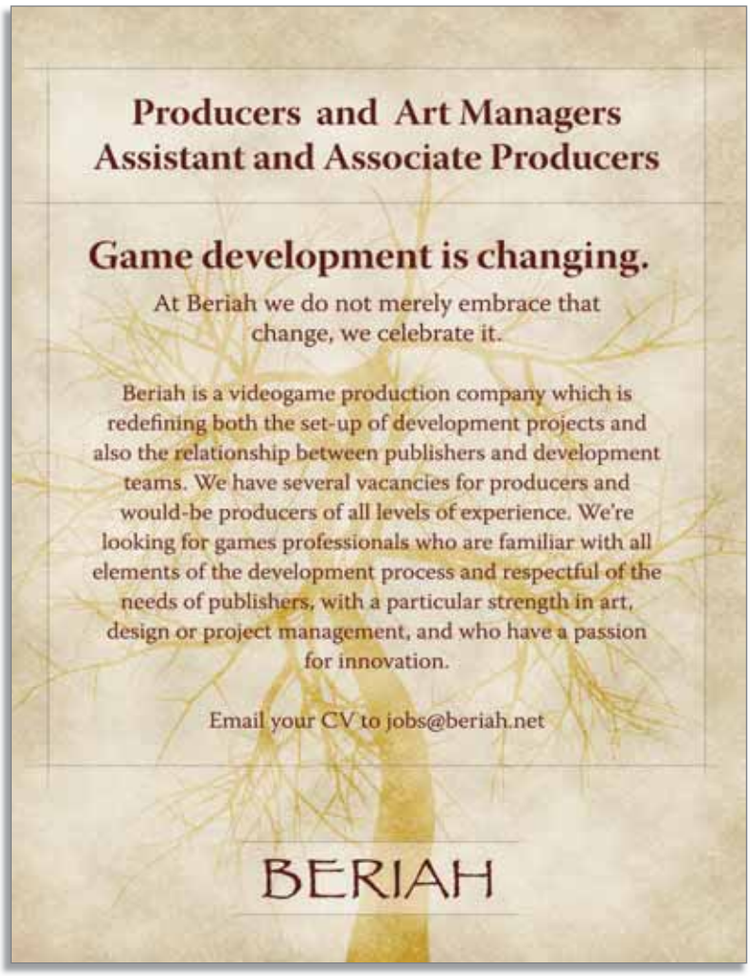
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Tools News

Polish push for Emergent's Eastern European expansion

Emergent has opened a new regional office in Poland, reacting to the growing Eastern European development industry.

The office will be headed up by Dave Solomon, who will work to grow relationships with Eastern European developers and provide on-the-ground support for the region. Bulgarian developer Black See and Russian studios Alterlab and Play Ten already use Emergent's game technologies.

Geoffrey Selzer, CEO of Emergent, said: "We are seeing a great deal of creativity in terms of games, concepts and technologies coming out of the Eastern European game development community.

"Emergent is very proud to be supporting what we view as some of the best minds and talent in the industry as this segment of the market matures. Dave Solomon is a great addition to our team and we are happy to have him on board to represent us in the region and lead our expanded operations there."

www.emergent.net

DEERING JOINS GEOMERICS

Geomerics has appointed industry veteran Chris Deering as a non-executive director.

Drawing upon roles as president of Sony Europe and chairman of Sony Computer Entertainment Europe, as well as earlier high-level positions at Columbia Pictures and Sony Pictures, Geomerics hopes he will provide invaluable insight for the company as its Enlighten SDK nears completion.

Gary Lewis, CEO of Geomerics, said: "We're absolutely delighted to welcome Chris Deering to our board of directors. I'd be hard pressed to think of another person with his level of experience in the industries our target market supplies."

www.geomerics.com

XAITING DEVELOPMENTS

German artificial Intelligence tool company Xaitment has opened up an office in San Rafael, California in a move to bolster its work with American game studios.

The company has appointed Katja Reitemeyer as the CEO of the new office. Reitemeyer co-founded NXN Software, which originally developed the asset management software Alienbrain, and she helped establish the firm's sales operations in the US, then overseeing the product after NXN's acquisition by Avid.

"The US represents a great opportunity for xaitment," said Dr. Andreas Gerber, xaitment's group CEO.

"And Katja is the ideal person for helping us take advantage of its potential. She possesses a thorough understanding of the game development process and has built great relationships with many of the key players in the industry. We have utmost confidence that she has the skill and experience to lead our company in the US market."

Also, the company has announced the second version of its Xait-Engine is now available, designed to offer more realistic in-game behaviours.

The new version includes a hierarchical finite state machine and rules interpreter (which can be blended together to create different character movement) and also the new NavMesh Generator which lets developers define details about an environment and a bot with the system letting the bot navigate through without a predetermined path.

"We have always envisioned an AI solution that would offer game developers the ability to go beyond simple pathfinding and decision-making," said Gerber.

"The new xait-Engine will do just that. A new hierarchical Finite State Machine, an enhanced Rule Interpreter and a flexible NavMesh Generator will enable game developers to create more immersive games by easily programming bots with more lifelike actions and reactions."

www.xaitment.com

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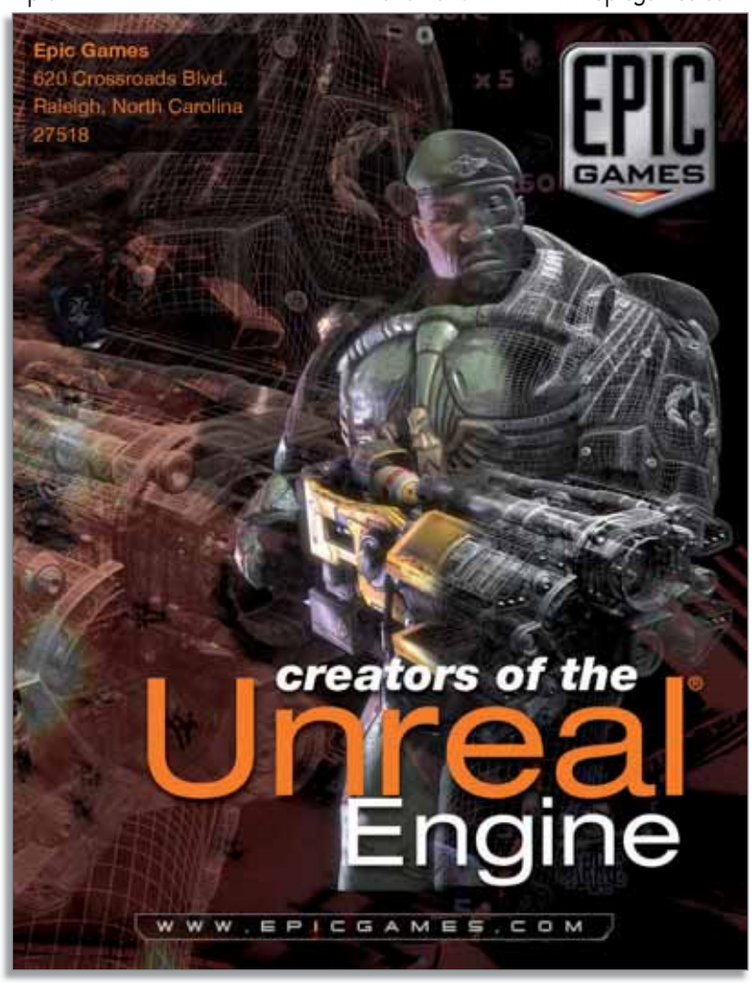

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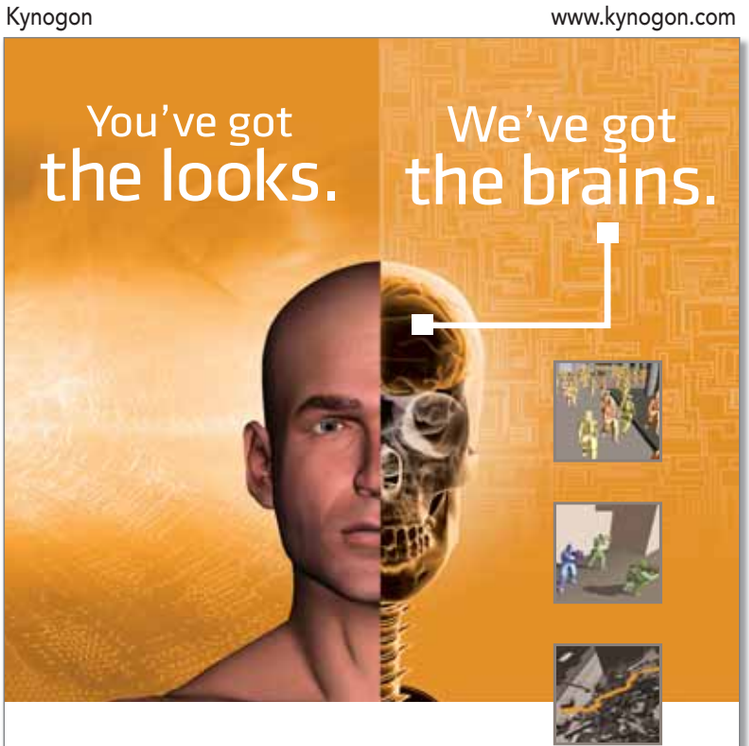

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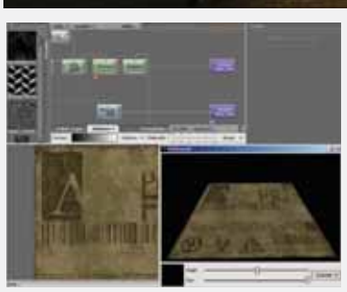
Tool Spotlight

PROFX



Described simply, ProFX is a middleware solution for generating and rendering procedural textures – but such a description belies the technology that powers it.

ProFX is split into two parts: the ProFX runtime engine and MaPZone Pro, a tool for authoring the maps. MaPZone Pro uses a node-based interface to enable artists to graphically produce diffuse, specular, normal, emissive, alpha and other varieties of maps. Thanks to being procedural, generated textures are resolution-free, meaning they can be scaled to any dimensions without artifacting. Seamless tiling is also a non-issue, and the tool comes with a library of ready-to-use texture maps.

The other benefit of being procedural is that the textures are stored as instructions as opposed to image data, and thus are dramatically smaller than comparable Photoshop-generated textures. Allegorithmic estimate that using ProFX will reduce a game's entire dataset by between 20 and 50 percent, with ProFX textures having a 300:1 space saving over DXT-compressed maps.

The ProFX runtime is used to generate the maps, which can be done at install-time, load-time or even on-the-fly, utilising CPU and GPU cores if required to speed up generation.

Allegorithmic also offers a free version of MaPZone Pro, simply titled MaPZone, which allows hobbyists and modders to create the same high-quality maps but render them to bitmaps instead of for the procedural run-time. This means that the textures can be used in any application or environment, and run-time support for XNA is currently being implemented.

ProFX is available as a self-contained runtime binary, which weighs in at 350kb, or as a patch for Unreal Engine 3 and Gamebryo.

CONTACT:

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37 Avenue Lavoisier
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Fax: +33 (0)4 73 40 50 01

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Services News

TwelveJ offers bespoke training for game developers

TwelveJ has announced a range of training programmes specifically designed for game development studios in collaboration with SCEE, Media Molecule and FreeStyleGames.

The programmes have been designed to address the concerns facing studios as they expand alongside the rest of the industry, with topic areas including 'leadership for senior management' and 'transition to management for seniors and leads'. Courses take anywhere from two hours upwards, and are presented as workshops, tutorials and seminars.

TwelveJ was founded by Kumar Jacob, who spent nine years taking responsibility for HR at Criterion as part of his role as vice president of corporate affairs.

"Having worked closely with development studios of all sizes and shapes over the past 12 years, we understand the needs and challenges they face as the industry continues to grow," said Kumar.

"Training is increasingly important to maintain creativity, efficiency and strong morale. This will directly impact on the quality of the game and the work practices. We not only cover areas such as management and leadership but also the functional areas such as programming and art. Our programmes enable the development studio to reach its goal whilst maintaining or changing its organisational culture. "

Jamie MacDonald, vice president of SCE Worldwide Studios Europe, added: "TwelveJ has been working closely with our European development studios, helping us to invest in the future by creating world-class training and staff development programmes."

www.twelvej.com

SONY ERICSSON LAUNCHES REMOTE TESTING SERVICE

Sony Ericsson has unveiled a new online remote testing service to speed up development of Java applications, including games. The Sony Ericsson Virtual Lab will provide Java developers with a means to develop, test, and monitor applications on SE phones in a quicker and cheaper manner than before.

The online service is available globally 24/7 to all members of Sony Ericsson Developer World and provides support for pre-commercial mobile phones released by the company. As a result, developers no longer need to invest in device labs or even be physically present on an operator's network.

Ulf Wretling, general manager and head of content planning and management at Sony Ericsson, said: "With this launch, Sony Ericsson is responding to consistent developer feedback about the importance of having early access to phones and prototypes for testing purposes."

The service allows developers to remotely access 2007 phones that are not yet commercially available, and has gone live with six mass-market feature phone models announced in 2007.

www.sonyericsson.com

ANIMAZOO OPENS SECOND LIFE SHOP

Motion capture system developer Animazoo has opened a shop in Second Life, selling animations to the residents of Linden Labs' virtual playground. The shop, located at 'Animazoo, QA Business Park', sells a range of high-quality animations with prices ranging from 50 to 300 Linden dollars (about 8.5p to 50p).

Animazoo marketing director, Jo Hull said: "Animazoo motion capture systems allow people the freedom to express themselves more fully through their avatars than previously possible.

"How you look is important in Second Life, and our system gives the user much more scope to look and move naturally and express themselves. The shop is an ideal extension of our brand into an environment that really benefits from motion capture, enhancing the Second Life user experience."

www.animazoo.com

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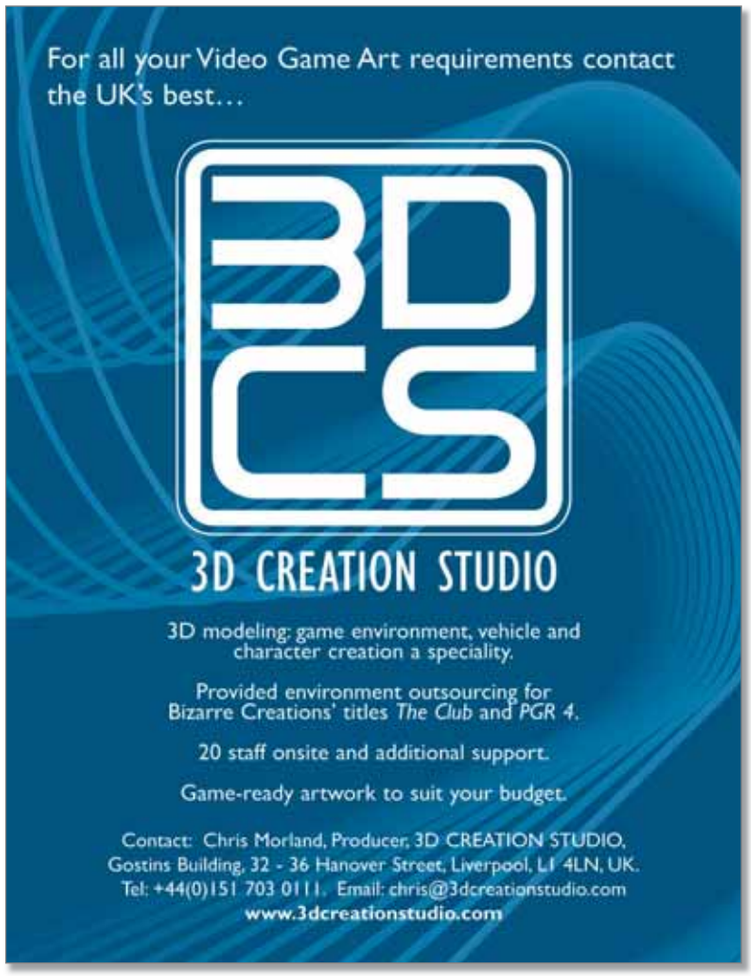
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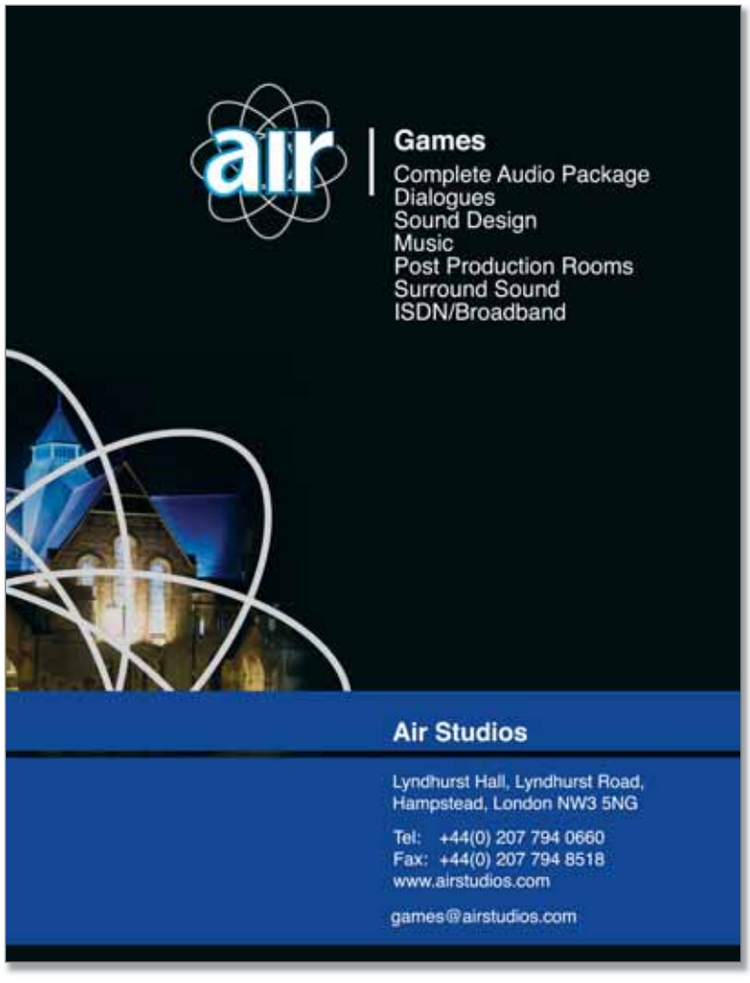

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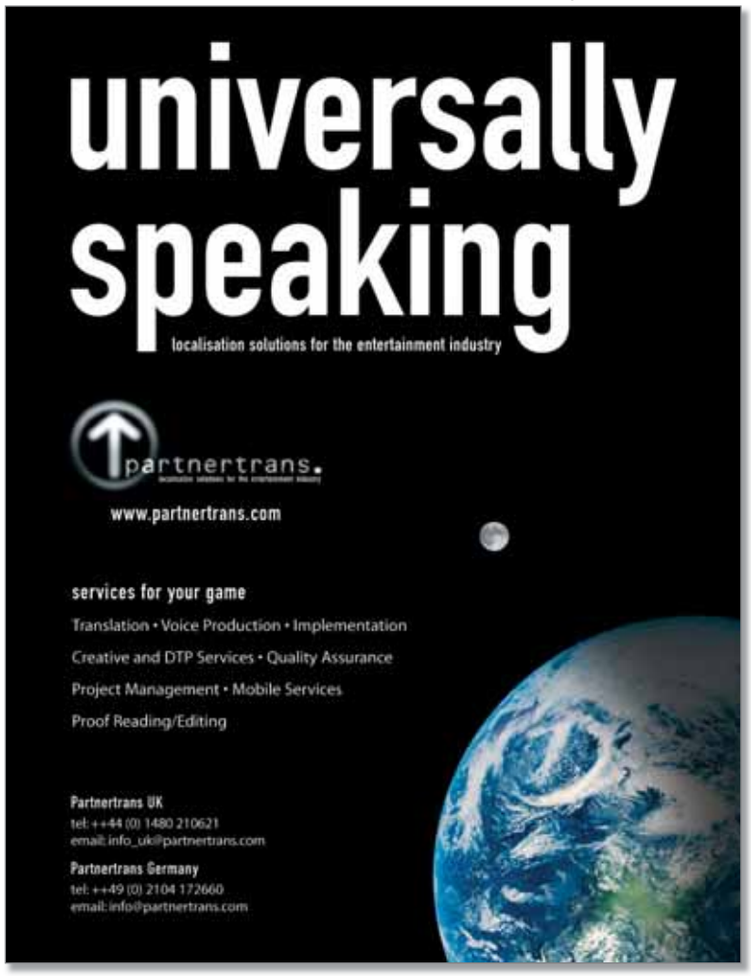

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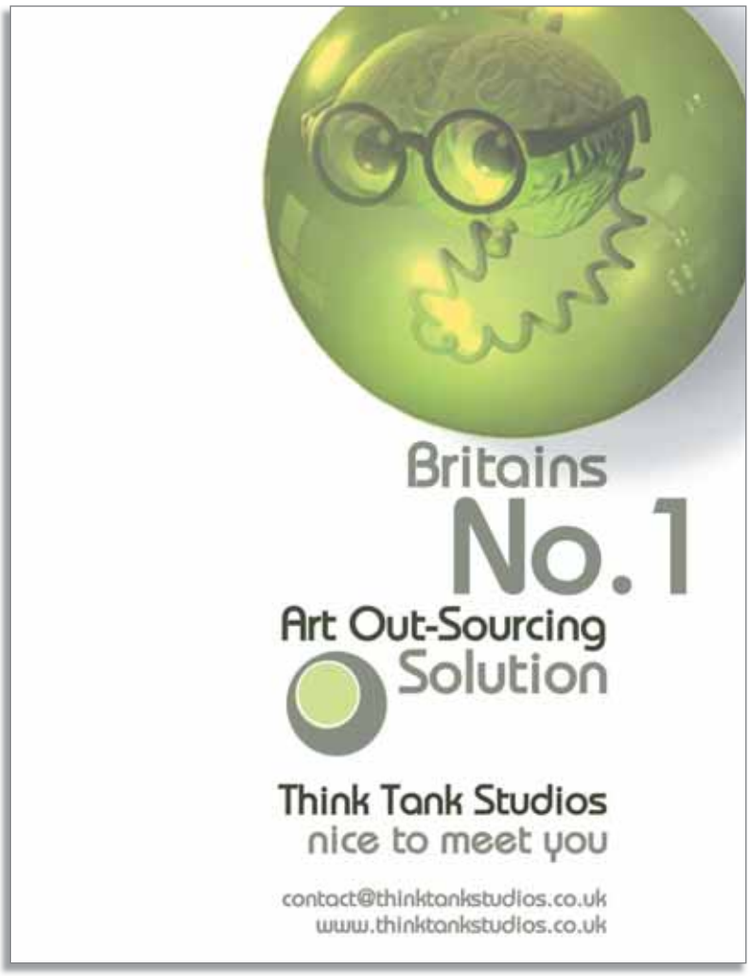

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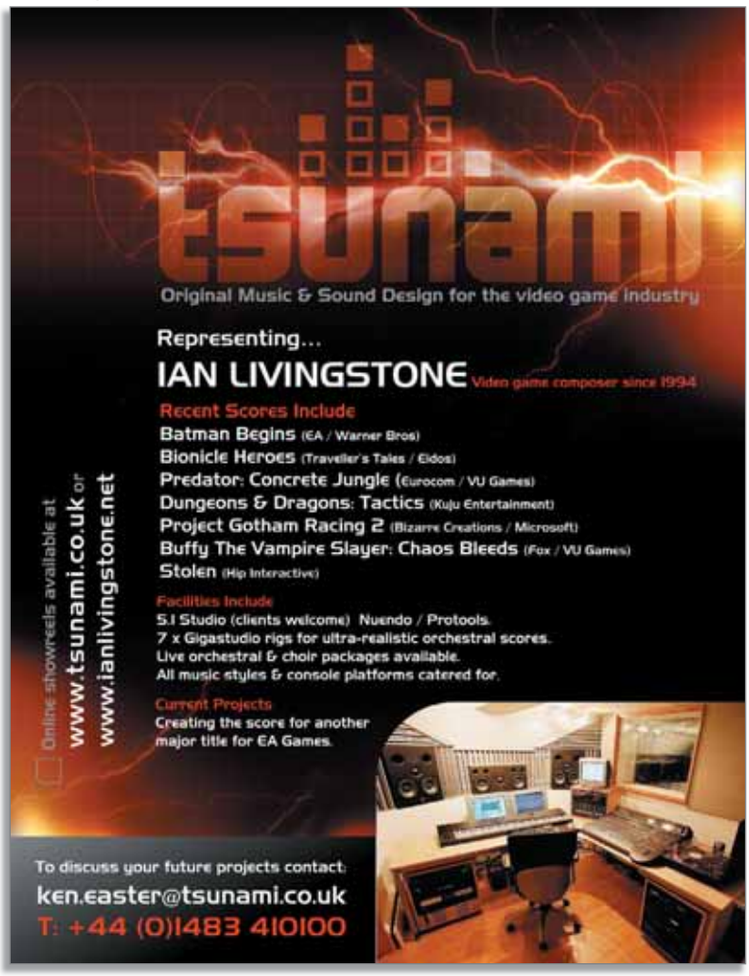
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Services Spotlight

SIDE UK

FACTFILE
Area of expertise: Audio for games
Location: UK and North America
Founded: 1997
Number of Employees: 15
W: www.side.com

Key Personnel: Andy Emery (managing director), Andrew Barnabas (music supervisor), Paul Arnold (sound design supervisor)

Recent work:
■ *Heavenly Sword* (Sony), *Dragon Quest VIII* (Square Enix)

Currently working on:
■ *Age of Conan* (Funcom), *Star Wars: The Force Unleashed* (LucasArts)

Based in state of the art facilities in London's West End and drawing on resources worldwide, Side claims to be the UK's leading sound production company for the gaming industry. The team includes scriptwriters, casting directors, voice directors, musicians and sound designers, covering all aspects of outsourced audio development.

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Training News

SAE Institute launches UK games course

Another course for budding games designers is to launch in the UK later this year via the co-founding of a new London college by the SAE Institute.

Called Qantm UK, it follows on from SAE's founding of Qantm Australia, which was created to provide education in video games programming, creative design and 3D animation.

SAE was formed as the School of Audio Engineering in 1976 but has over the years diversified to include 3D media and since 1998 has offered full university degrees thanks to a partnership with Middlesex University.

The new college in the UK will offer certificate, diploma, bachelors and masters qualifications and Qantm already has industry partners ready to make a course that is relevant and practical.

Nic Oliver from Qantm UK commented: "With such a vibrant games, web and multimedia industry, the UK was always going to be a prime choice to benefit from a Qantm educational facility. The new London college will meet the demands of a flourishing local industry keen to employ the best students for some of the most exciting careers.

"The facility is equipped with the latest technology and a huge variety of hardware and software to help give a solid grounding to students in all common work practices in the industry."

He added: "Experience from the Australian Qantm course shows that working closely with the industry yields great dividends in terms of relevant and practical course content and, consequently, higher employment opportunities. Qantm UK will follow this important and successful direction, providing very industry focused courses with the flexibility to allow specialisation in specific areas of the industry.

"With the games market exploding with next-generation activity and web designers in such high demand there's never been a better time to consider a career in interactive entertainment and new media," he said.

www.sae.edu

COLOGNE GETS GAME LAB

Cologne's University of Applied Sciences is to launch a new masters games course later this year as part of its brand new Cologne Game Lab.

The course is being designed to bring together fields in game design, audio visual design, programming and management into one interdisciplinary curriculum while the lab will look to improve research in those fields.

The university also say that course will be designed as broad and international as possible, with plans to make the Cologne Game Lab the only institution of its kind in Europe thanks to the way it will mix games development and research.

"Cologne Game Lab draws on the rich body of research at Cologne University of Applied Sciences," said Prof. Dr. Joachim Metzner, the university's rector.

"The establishment of the CGL will allow us to build on our previous achievements in the area of computer games. The interdisciplinary approach that we will take to teaching and research reflects the complexity of the subject matter."

He added: "The new knowledge and skills that will emerge will be important not only for the entertainment software world, but also reflect an interest of society as a whole: building up knowledge and experience of games."

www.colognegamelab.org

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THE BYRONIC MAN

Simon Byron tries downloading the past…

It seemed a simple enough task. *The Secret of Monkey* Island was, as I recall, one of my favourite Amiga games, so getting SCUMM running on my new Nokia Internet Tablet seemed like literally the best idea ever.

I'm kind of addicted to getting games running on inappropriate formats. *Time Crisis* on iPod is my ultimate goal – complete with lightgun, obviously. So installing a celebrated emulator on an open-sourced operating system should have been a breeze.

The Nokia 770 runs on a Linux-based system, which I'd never used before. Its binaries appear mysteriously scattered across the far reaches of the World Wide Web, for no apparent reason than to confuse newbies. Typing INSTALL SCUMM proved ineffective. "Why would I want to do that?" answered the device. "I don't think so," came its second scripted reply. Already, I was tempted to type "fuck off, then" but remembered the trouble Charles Cecil got into in one of his early text adventures when he joked about raping, only for *The Sun* newspaper to find out.

It quickly became obvious that I needed to DOWNLOAD the SOFTWARE from the INTERNET. Only trouble was – the PC had been split into three pieces which had be scattered throughout my house.

I spent four fruitless hours prodding literally everything in my house with my finger, hoping to spot some kind of right-click option with which to interact. Knowing no better, I decided to pick up the DECAF COFEE, HAMSTER, COIN OF MONEY and everything else not nailed down to the floor, all of which fit perfectly into my POCKETS OF INFINITE SIZE. The PC was eventually reconstructed using the MOTHERBOARD, GRAPHICS CARD, and MONITOR and UNIVERSAL USB HUB. Once I'd constructed the MONITOR from the GLASS WINDOW, CATHODE RAY TUBE and powered it up using the HAMSTER and WIRE and PLUG and ELECTRICTY. I'd tried to get hold of the HUMAN INTERFACE DEVICE by BUYING it from a SHOP, but that, obviously, proved ineffective. I had to get the BUNCH OF KEYS off the SLEEPING GUARD and NAIL them to a BOARD. Obvious, really.

"Installing a celebrated emulator on an open-sourced operating system should have been a breeze…"

Sourcing the games was an additional challenge. Obviously I own *The Secret of Monkey Island*, but the Nokia Tablet doesn't have an AMIGA FLOPPY DISK DRIVE. Thinking illogically, I decided to try SHRINK the DISK in the MICROWAVE, but this just MADE MY KITCHEN SMOKE A BIT. Instead, I HID MY MORALS and got a friend to email the files over. I kind of liked the IRONY, what with it being a game about PIRATES, etc.

After much tinkering, and WORKING OUT WHERE THE MEMORY CARD'S FILES COULD BE ACCESSED FROM IN THE RUDIMENTARY FILE MANAGER, the game booted. And then, like the less wrinkled, slightly happier version of myself some 17 years ago on an Amiga I'd convinced by then-girlfriend to buy me if she wanted me to move in with her, I became instantly BAFFLED at what I was supposed to be doing.

I tried CONVINCING MYSELF ADVENTURE GAMES WERE GOOD, but I COULDN'T. I'd spend hours on the Tube to use objects with other inappropriate objects, and then getting funny looks from other passengers as I swore randomly.

Text-based and, subsequently, point and click adventures were hugely popular back in the day. Turns out, 'the day' was when gamers were happy to spend hours trying to use one unrelated object on another and being barracked by sarcastic in-game commands in order to accidentally solve a puzzle with a literally incomprehensible solution. Ordinary tasks were split into maddeningly complicated challenges, making a quest to open a door somewhat akin to assembling a jigsaw with no image, whilst blindfolded and wearing mittens.

Thankfully, the Nokia Internet Tablet broke shortly afterwards – probably of boredom, too – and I ended up getting a full refund from Expansys. My emails to Ron Gilbert demanding a full and frank apology for wasting my time twice and my money once remain unanswered.

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